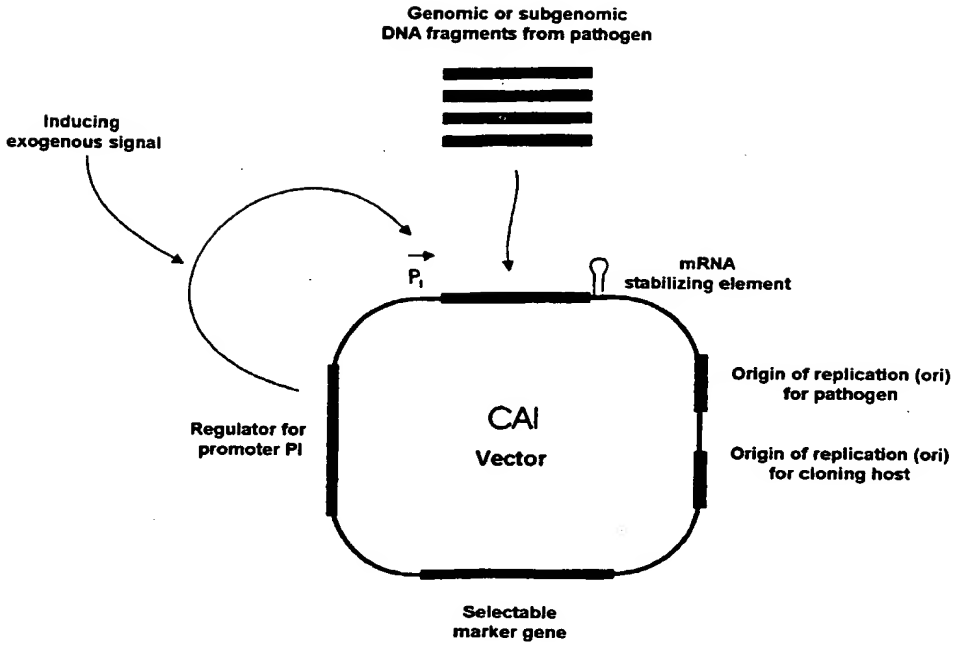

Genomic or subgenomic
DNA fragments from pathogen
Inducing
exogenous signal
P_I
mRNA
stabilizing element
Origin of replication (ori)
for pathogen
CAI
Vector
Origin of replication (ori)
for cloning host
Regulator for
promoter PI
Selectable
marker gene

Figure 1

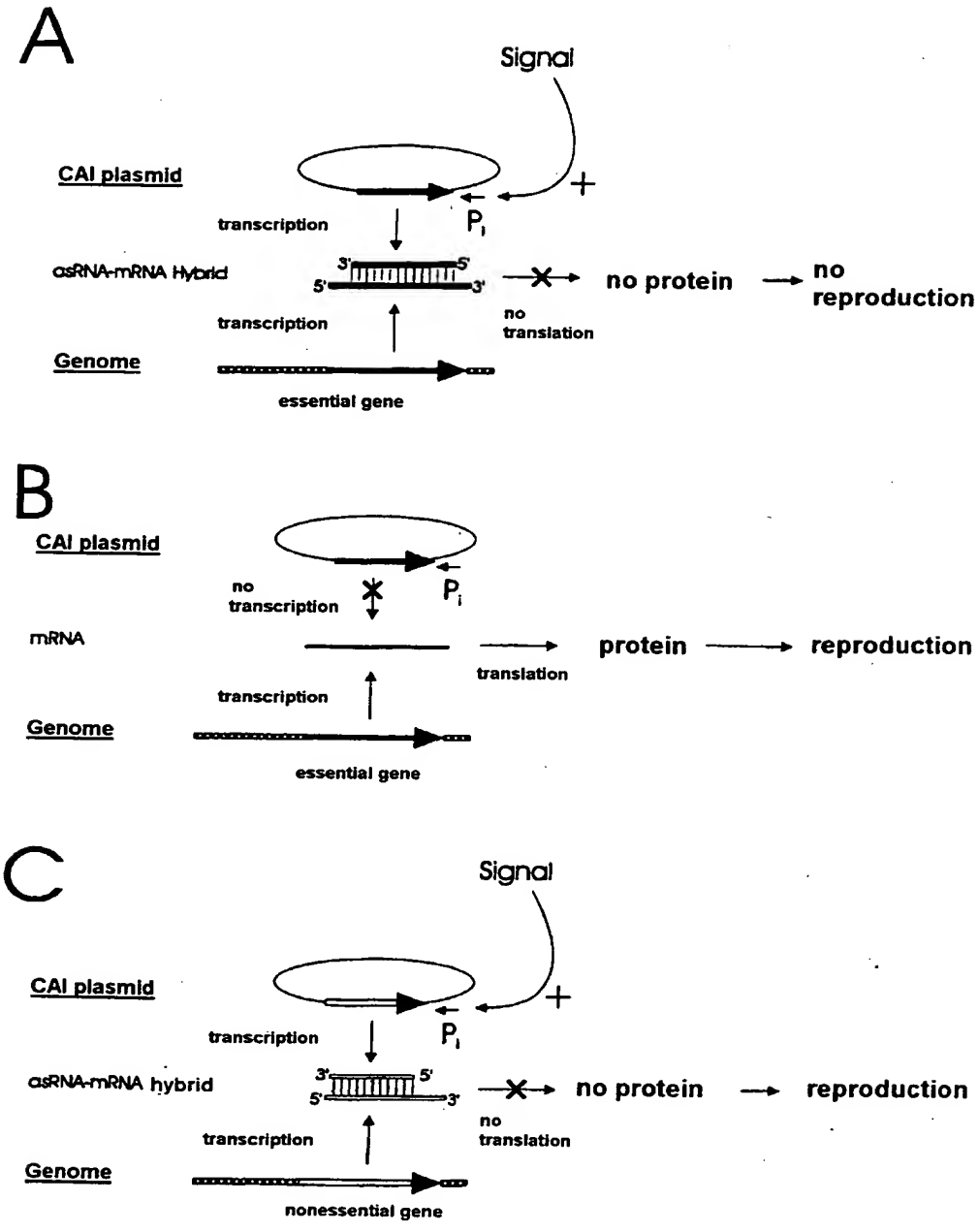
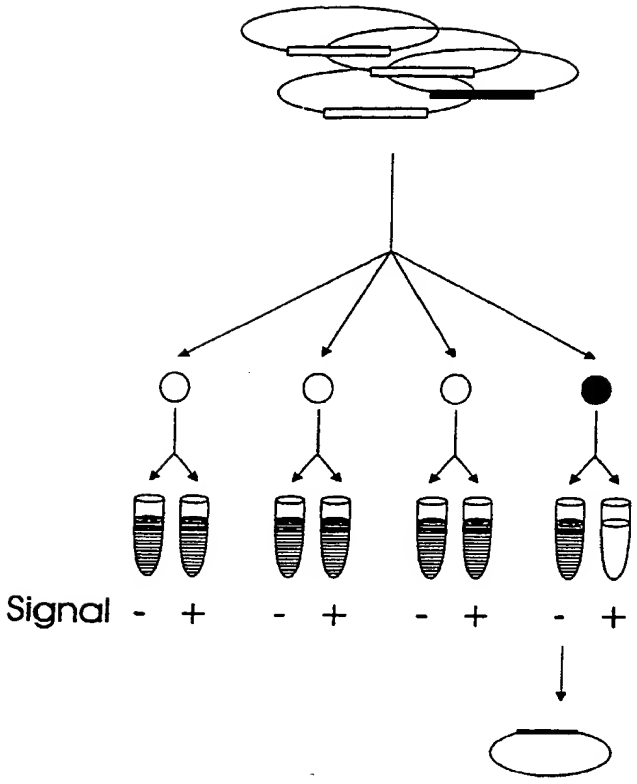

A
Signal
CAI plasmid
transcription
P_i
asRNA-mRNA Hybrid
3'
5'
5'
3'
no protein
no reproduction
no translation
transcription
Genome
essential gene
B
CAI plasmid
no transcription
P_i
mRNA
protein
reproduction
translation
transcription
Genome
essential gene
C
Signal
CAI plasmid
transcription
P_i
asRNA-mRNA hybrid
3'
5'
5'
3'
no protein
reproduction
no translation
transcription
Genome
nonessential gene

Figure 2



Genomic or subgenomic gene library in the CAI vector for gene-specific asRNA synthesis

Transfer of the gene library into the microorganism to be investigated with repression of asRNa synthesis

Selection for clones with CAI vector by means of marker gene

Individual clones with CAI plasmid

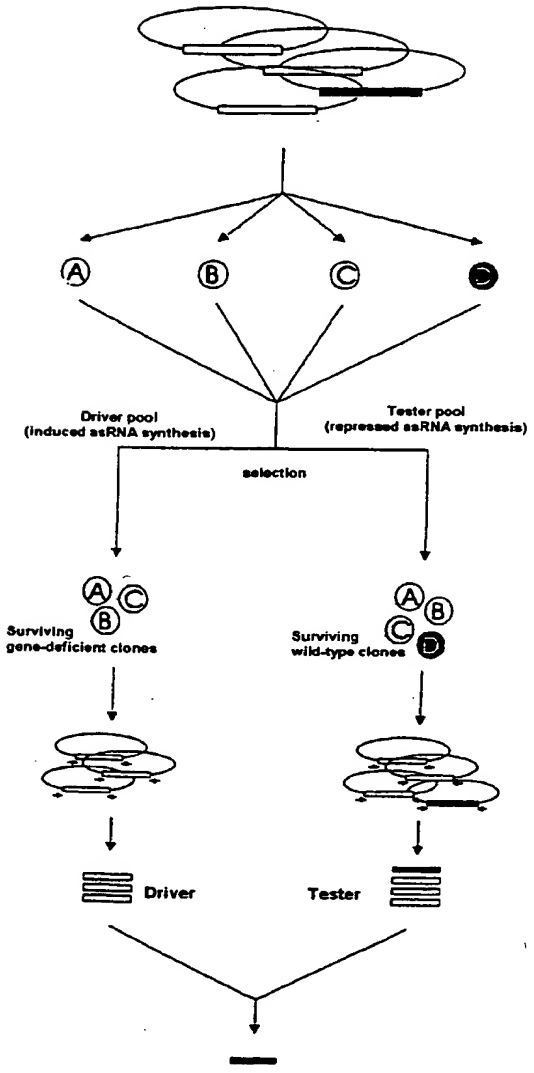
Transfer of the individual clones into biological test system

Comparison of the reproduction rate of each individual clone with repression (-) and induction (+) of asRNA synthesis

Isolation of the asRNA plasmid from those clones with reduced reproduction rate.

Establishment of the sequence of the genomic fragment and identification of the essential gene.

Figure 3



Genomic or subgenomic gene library in the CAI vector for gene-specific asRNA synthesis

Isolation of individual clones with CAI plasmid as in Fig. 3

Combination of a plurality of individual clones in pools which are tested in parallel

Isolation of the CAI plasmids from surviving clones of both pools

PCR amplification of the genomic fragments from CAI plasmids

Enrichment of the genomic fragments of essential genes by genetic subtraction

Cloning and sequencing of the enriched genomic fragments

Figure 4

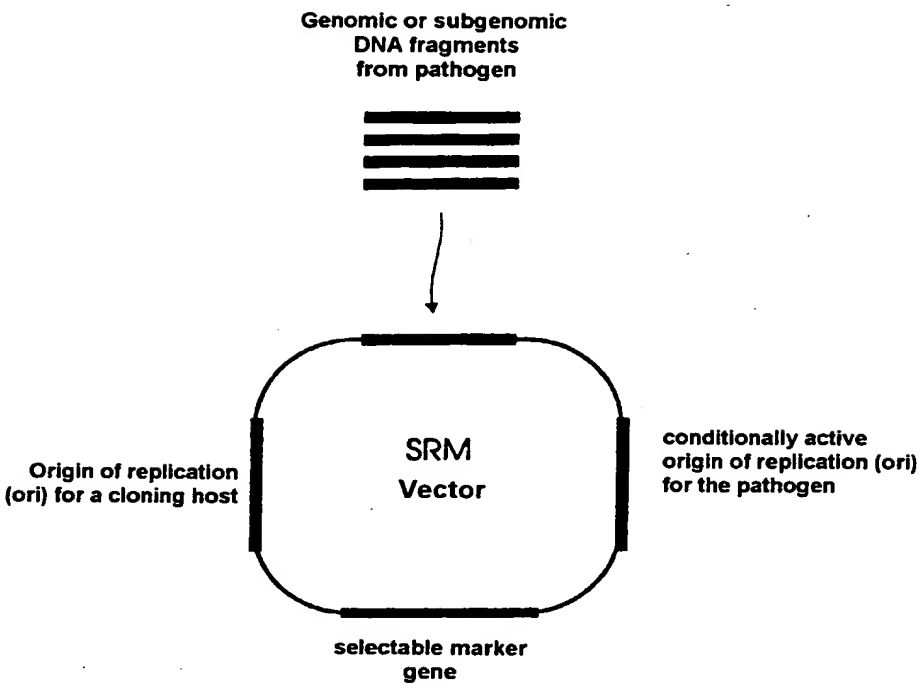

Genomic or subgenomic
DNA fragments
from pathogen
SRM
Vector
Origin of replication
(ori) for a cloning host
conditionally active
origin of replication (ori)
for the pathogen
selectable marker
gene

Figure 5

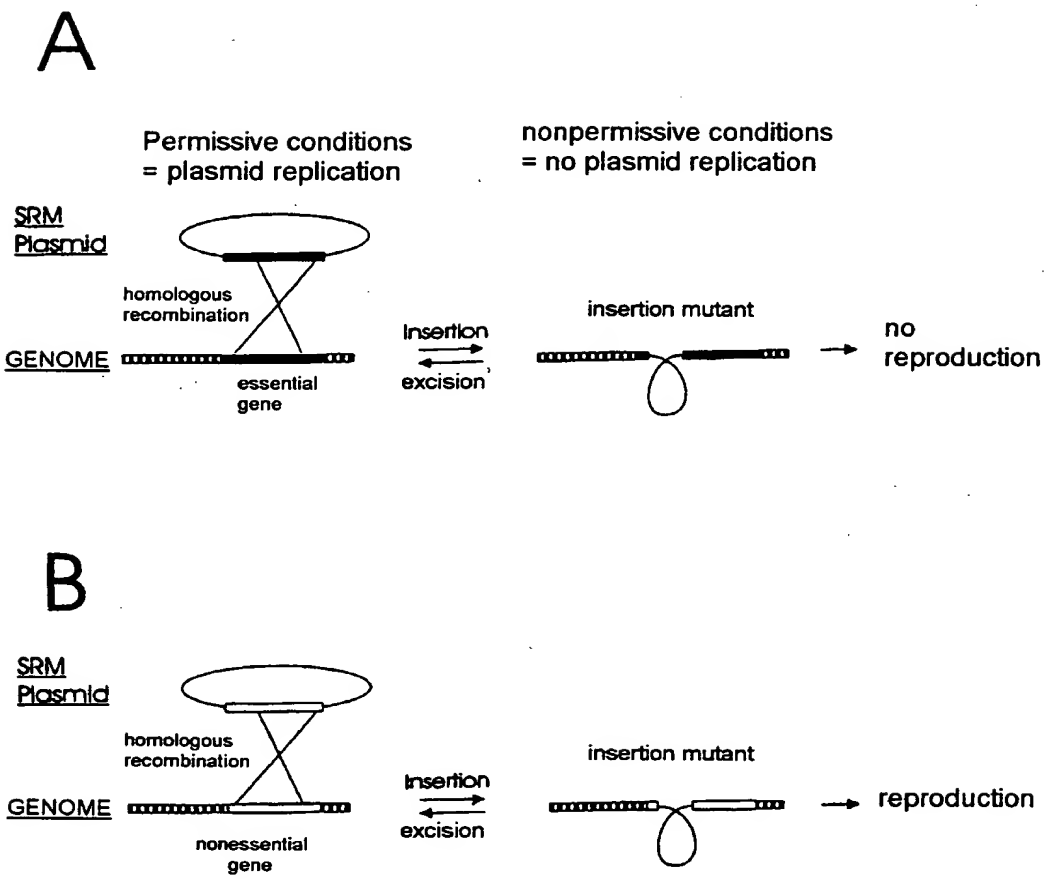
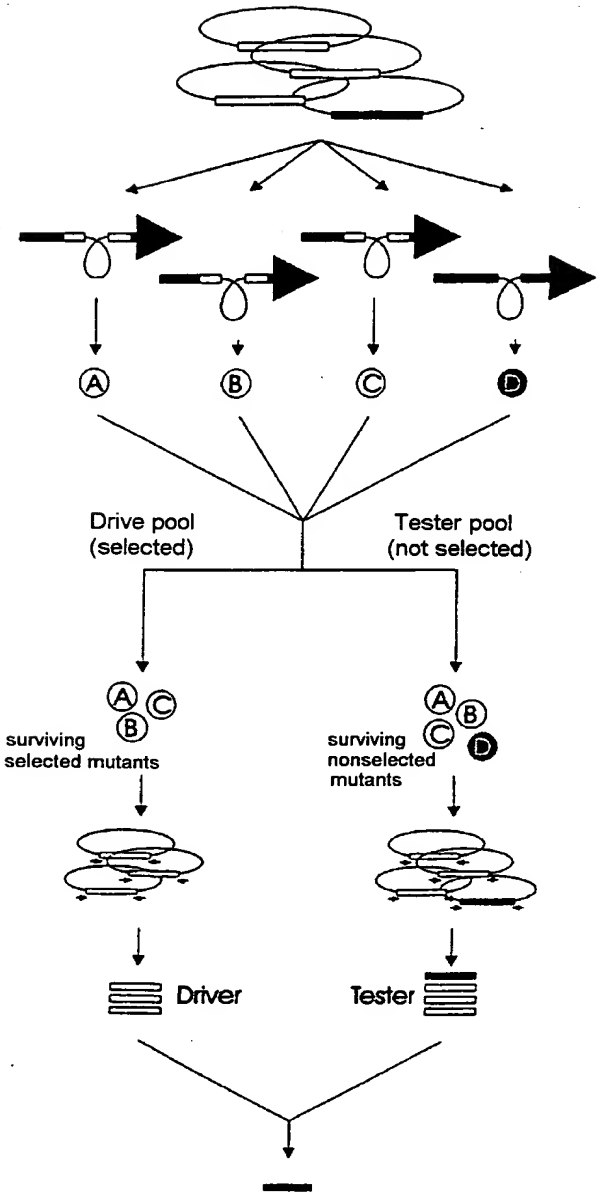

A
Permissive conditions
= plasmid replication
nonpermissive conditions
= no plasmid replication
SRM
Plasmid
homologous
recombination
GENOME
essential
gene
Insertion
excision
insertion mutant
no
reproduction
B
SRM
Plasmid
homologous
recombination
GENOME
nonessential
gene
Insertion
excision
insertion mutant
reproduction

Figure 6



Genomic or subgenomic gene library in the SRM vector for gene-specific insertion mutagenesis

Transfer into the microorganism to be investigated

Genomic insertion mutants

Isolation of individual clones with gene-specific insertions as in Fig. 3 under conditions with which the plasmids do not replicate

Combination of a plurality of individual clones in pools which are tested in parallel

Selection of one of the two pools for clones capable of survival (for example in an animal)

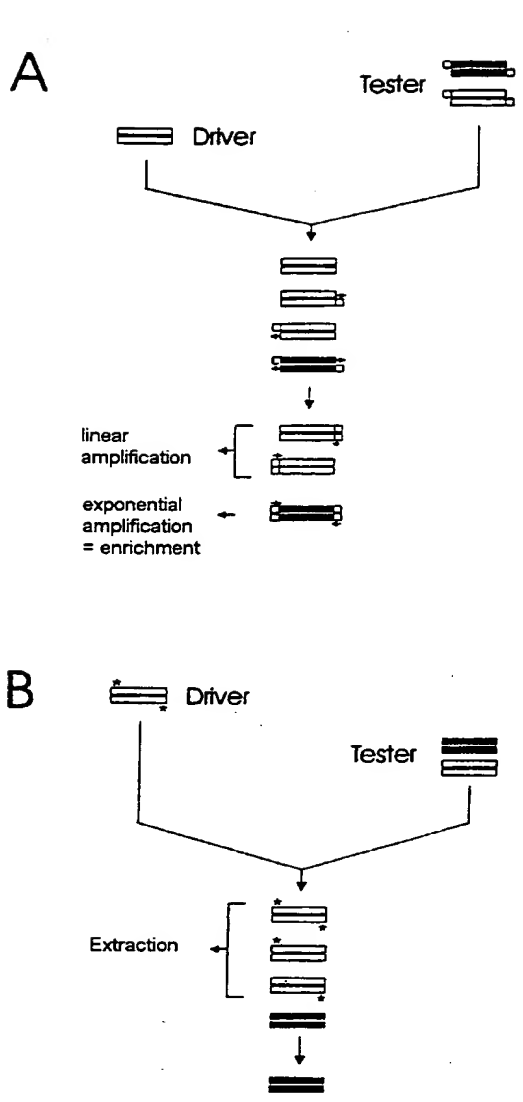
Isolation of the SRM plasmids from the two pools by recircularization of the inserted plasmids under conditions which permit plasmid replication

PCR amplification of the genomic fragments from SRM plasmids

Enrichment of the genomic fragments of essential genes by genetic subtraction

Cloning and sequencing of the enriched genomic fragments

Fig. 7



Ligation of the tester DNA with adapter oligonucleotides

Mixing of the tester DNA with a molar excess of driver DNA

Denaturation and rehybridization of the mixture

Filling in of the protruding single-strand ends

PCR amplification with oligonucleotide primers complementary to the adaptor sequences

Enrichment of tester DNA with genes for vital function

Labeling of the driver DNA fragments with biotin

Mixing of the tester DNA with a molar excess of driver DNA

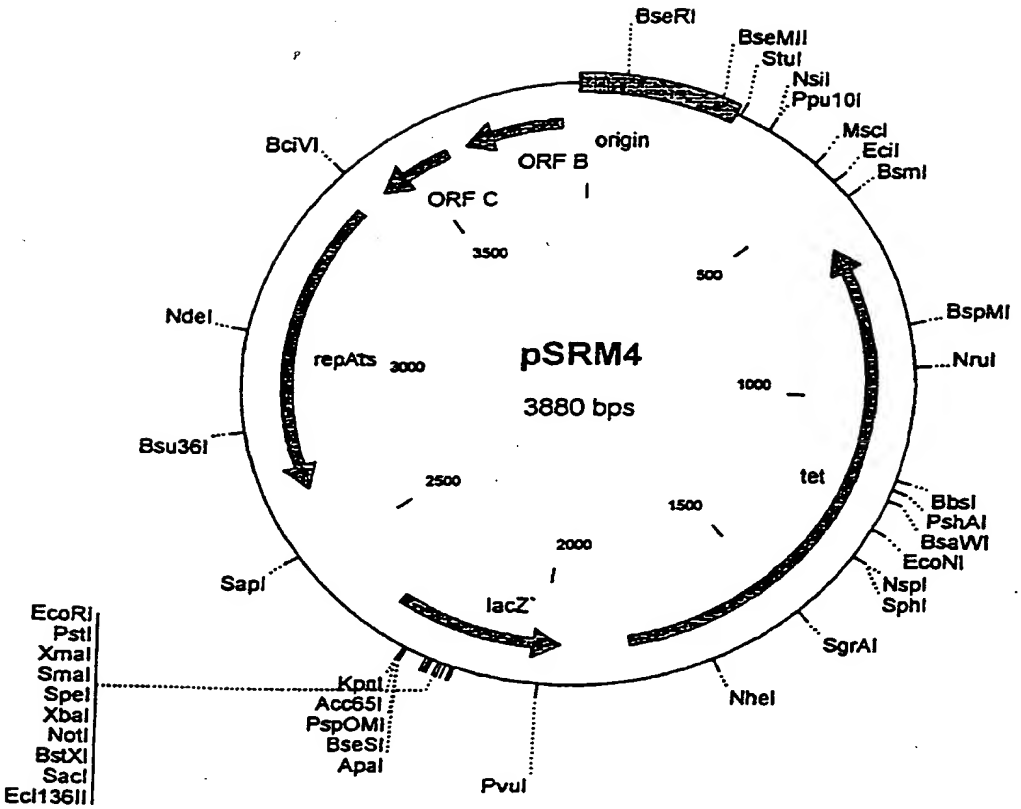
Denaturation and rehybridization of the mixture

Extraction of the biotinylated homo- and heteroduplex DNA fragments with carrier-coupled streptavidin

Enrichment of tester DNA with genes for vital function

Figure 8

Figure 9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BseMII
StuI
NsiI
Ppu10I
MscI
EciI
BsmI
origin
ORF B
ORF C
BciVI
NdeI
BspMI
NruI
repAts
pSRM4
3880 bps
Bsu36I
tet
BbsI
PshAI
BsaWI
EcoNI
NspI
SphI
SapI
lacZ'
SgrAI
EcoRI
PstI
XmaI
SmaI
SpeI
XbaI
NotI
BstXI
SacI
Ecl136II
KpnI
Acc65I
PspOMI
BseSI
ApaI
PvuI
NheI
500
1000
1500
2000
2500
3000
3500

10 / 82

Figure 10

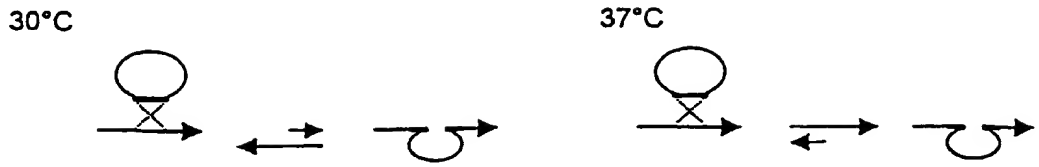

Figure 11

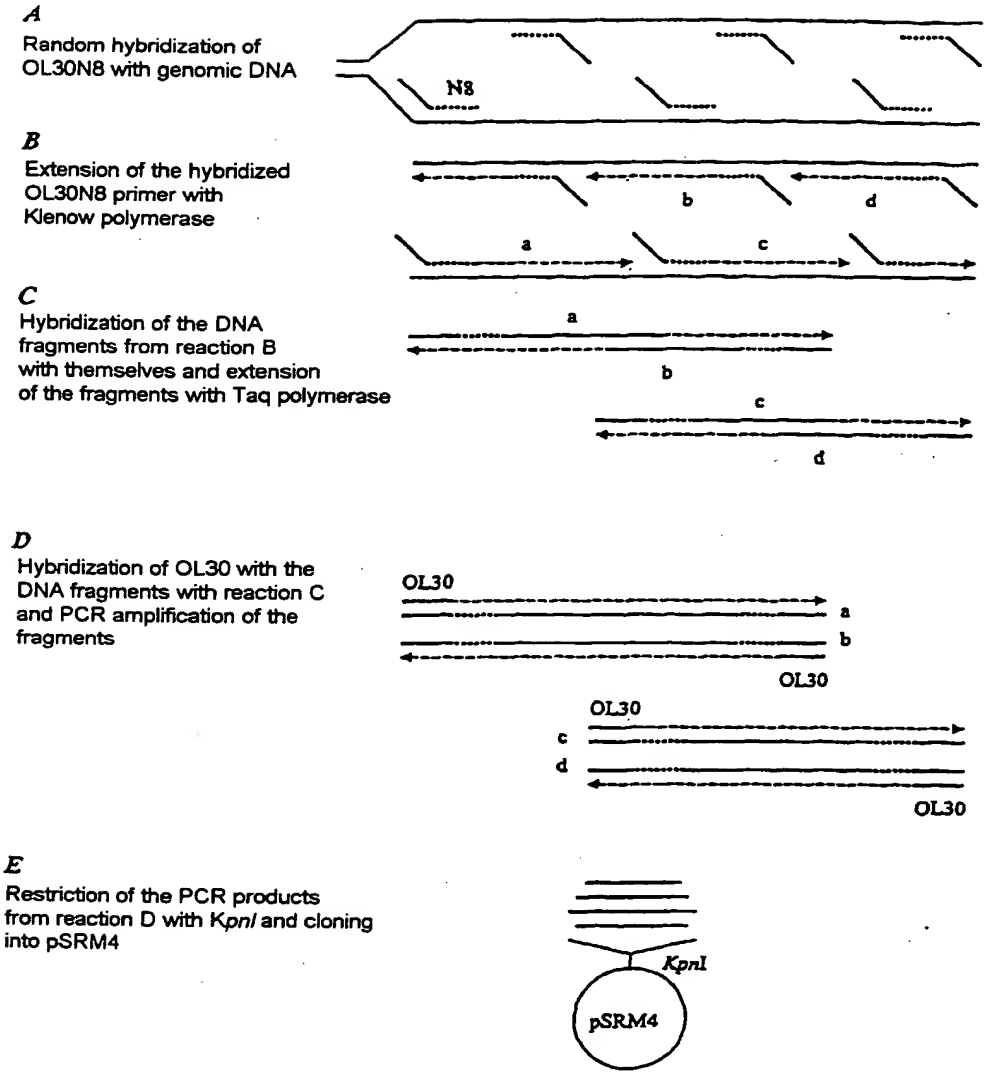
A
Random hybridization of OL30N8 with genomic DNA
N8
B
Extension of the hybridized OL30N8 primer with Klenow polymerase
a
b
c
d
C
Hybridization of the DNA fragments from reaction B with themselves and extension of the fragments with Taq polymerase
a
b
c
d
D
Hybridization of OL30 with the DNA fragments with reaction C and PCR amplification of the fragments
OL30
a
b
OL30
OL30
c
d
OL30
E
Restriction of the PCR products from reaction D with KpnI and cloning into pSRM4
KpnI
pSRM4

Fig. 12

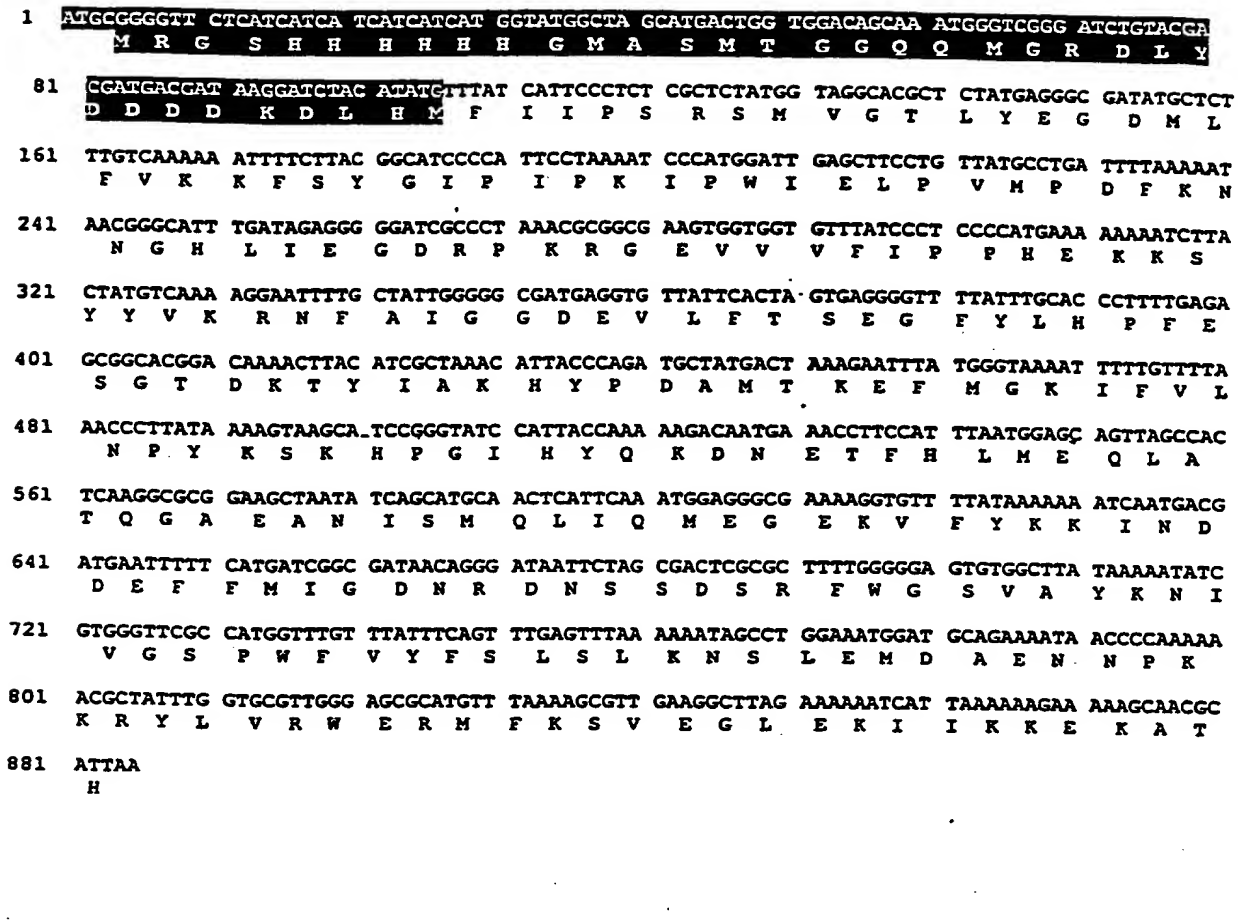

Fig. 13

```
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FEATURES             Location/Qualifiers
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                     /gene="tet"
     CDS             complement (1964..2319)
                     /gene="lacZ`"
     CDS             complement (2653..3351)
                     /gene="repAts"
     CDS             complement (3417..3578)
                     /gene="ORF C"
     CDS             complement (3619..3828)
                     /gene="ORF B"
BASE COUNT      993 a    978 c    899 g   1010 t
ORIGIN
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       61 CTTGAGCCTC CTCCAACCGA AATAGAAGGG CGCTGCGCTT ATTATTTCAT TCAGTCATCG
      121 GCTTTCATAA TCTAACAGAC AACATCTTCG CTGCAAAGCC ACGCTACGCC AAGGGCTTTT
      181 ACGCTACGAT AACGCCTGTT TTAACGATTA TGCCGATAAC TAAACGAAAT AAACGCTAAA
      241 ACGTCTCAGA AACGATTTTG AGACGTTTTA ATAAAAAATC GCTAGTCCGA GGCCTCGACC
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      421 GGGTCCTCAA CGACAGGAGC ACGATCATGC GCACCCGTGG CCAGGACCCA ACGCTGCCCG
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      601 ATCCGTTAGC GAGGTGCCGC CGGCTTCCAT TCAGGTCGAG GTGGCCCGGC TCCATGCACC
      661 GCGACGCAAC GCGGGGAGGC AGACAAGGTA TAGGGCGGCG CCTACAATCC ATGCCAACCC
      721 GTTCCATGTG CTCGCCGAGG CGGCATAAAT CGCCGTGACG ATCAGCGGTC CAGTGATCGA
      781 AGTTAGGCTG GTAAGAGCCG CGAGCGATCC TTGAAGCTGT CCCTGATGGT CGTCATCTAC
      841 CTGCCTGGAC AGCATGGCCT GCAACGCGGG CATCCCGATG CCGCCGGAAG CGAGAAGAAT
      901 CATAATGGGG AAGGCCATCC AGCCTCGCGT CGCGAACGCC AGCAAGACGT AGCCCAGCGC
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     1081 CATCGTCGCG CTCCAGCGAA AGCGGTCCTC GCCGAAAATG ACCCAGAGCG CTGCCGGCAC
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     1321 CGCCGCCGCA AGGAATGGTG CATGCAAGGA GATGGCGCCC AACAGTCCCC CGGCCACGGG
     1381 GCCTGCCACC ATACCCACGC CGAAACAAGC GCTCATGAGC CCGAAGTGGC GAGCCCGATC
     1441 TTCCCCATCG GTGATGTCGG CGATATAGGC GCCAGCAACC GCACCTGTGG CGCCGGTGAT
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     1621 GGACAGTGCT CCGAGAACGG GTGCGCATAG AAATTGCATC AACGCATATA GCGCTAGCAG
     1681 CACGCCATAG TGACTGGCGA TGCTGTCGGA ATGGACGATA TCCCGCAAGA GGCCCGGCAG
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     1981 TGCGCAACTG TTGGGAAGGG CGATCGGTGC GGGCCTCTTC GCTATTACGC CAGCTGGCGA
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     2341 GTTATCCGCT CACAATTCCA CACAACATAC GAGCCGGGAG CATAAAGTGT AAAGCCTGGG
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     2521 TGCGTATTGG GCGCTCTTCC ATGGTACTTA ATTCAACTTC CATTTCTCTG TATCTTTCAA
     2581 TACGCTCTTT TAAGTCCTTA ATTTCTTTTT TTAATTCCTC ATTTTCAGCA AATAACTCTT
     2641 TTTCTTTGTT TGTCATTTTA TTTCCCCCGT TTCAGCATCA AGAACCTTTG CATAACTTGC
```

continued Fig. 13

```
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3121 ATTTCGTGCA ATATATATAA CGTGATAGTG TGGTTTTTTA TAGTGCTTTC CATTTTGTAT
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3841 TCCAAATTTT TTTCAAAAAT TTTCCAGCGC TACCGCTCGG
```

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Figure 14

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.....10.....20.....30.....40.....50.....60.....70.....80..
.....90.....100

HPN165
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GGGGGACTGGGGGGAGTGCGAGCGTAACTTTTAACAGCCAAACTTCGCTCATTCTCAACCAAGCGAATATCGTAAGCTCGCA
AACCGATGGGATTTTTAGCATGCTGGGTCAAGAGGGCATCAATAAGGTTTTCAATCAAGCCGGGCTCGCTAATATTTTGGGC
GAAGTGGCAATGCAATCCATTAACAAAGCCGGGGGATTAGGGAATTTGATAGTAAATACGCTAGGGAGTGATAGCGTGATTG
```

Figure 14

GGGGGTATTTAACGCCTGAGCAAAAAAATCAAACCCTAAGCCAGCTTTTGGGGCAGAATAATTTTGATAACCTCATGAACGA
TAGCGGTTTGAACACGGCGATTAAGGATTTGATCAGACAAAAATTAGGCTTTTGGACCGGGCTAGTGGGGGGATTAGCCGGA
CTGGGGGGCATTGATTTGCAAAACCCTGAAAAGCTTATAGGCAGCATGTCCATCAATGATTTATTGAGTAAAAAGGGGTTGT
TCAATCAGATCACCGGCTTTATTTCCGCTAACGATATAGGGCAAGTCATAAGCGTGATGCTGCAAGATATTGTCAAGCCGAG
CGACGCTTTAAAAAACGATGTAGCCGCTTTGGGCAAGCAAATGATTGGCGAATTTTTAGGCCAAGACACGCTCAATTCTTTA
GAAAGCTTGCTGCAAAACCAGCAGATTAAAAGCGTTTTAGACAAAGTCTTAGCGGCTAAAGGATTAGGGTCTATTTATGAAC
AAGGTTTGGGGGATTTGATCCCTAATCTTGGTAAAAAGGGGATTTTCGCTCCCTATGGCTTGAGTCAAGTGTGGCAAAAAGG
GGATTTTAGTTTCAACGCGCAAGGCAATGTTTTTGTGCAAAATTCCACTTTCTCTAACGCTAATGGAGGCACGCTCAGTTTT
AACGCAGGAAATTCGCTCATTTTTGCCGGAAACAACCACATCGCTTTCACTAACCATTCTGGAACGCTCAATTTGTTGTCTA
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GTCTCAAGGCAATCTGTTTATCAACGCTAGCTGCGTGCAACAAAGCGATCCAACGACAGCTAGCGCCACAAACCCTTGCACC
ACCGCTCAAAATAACGCTTCTTCTAGTAATGCGTCAAACAACGCGCCAATCGCCTTAAATAATAACGATGAAAGCTTGGTGG
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CAAACGCCTTTTATGAATGTCAGCGTGGCTAATGGCGGAACTTACACTTTATTAAAAAGCAGCCGTTATATTGATTACAATA
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GCCTCTCAAAACAACATTTTAAGCCTTTCTGTCCTTCACAACCAGATTAAAATGTCTTATGGTAATAAAGTGATGGACTTTA
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CGCTATCAAGTGGCTTTCAACATTGATGATGGAGACTAAAGAAAACCCGCTTTTTGCGCCGATTTATTTAGAAAACCACTCT
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CCAGCCTTTTAGAAATGGCGAGTTACACCCAACAAACCAGCCGTTTGACAAAACTCTCTGATTTTAGGGCTAGAGAGGGAGA
GTCCAATTTTTCAGAGCGCTTGTTAGAGCTTAAAAACAAGCGTTTTAGCGATCCTAACCCTAGTGAGGTTTTTGTCAAATAC
TCTCAACTCAGCAAACACCCCAATAACCTTTGGATTCAAGGGGTGGGAGGAGCGAGCTTTATTTCTGGGGGCAATGGCACGC
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HPC001
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GGGGATCGCCCTAAACGCGGCGAAGTGGTGGTGTTTATCCCTCCCCATGAAAAAAAATCTTACTATGTCAAAAGGAATTTTG
CTATTGGGGGCGATGAGGTGTTATTCACTAGTGAGGGGTTTTATTTGCACCCTTTTGAGAGCGGCACGGACAAAACTTACAT
CGCTAAACATTACCCAGATGCTATGACTAAAGAATTTATGGGTAAAATTTTTGTTTTAAACCCTTATAAAAGTAAGCATCCG
GGTATCCATTACCAAAAAGACAATGAAACCTTCCATTTAATGGAGCAGTTAGCCACTCAAGGCGCGGAAGCTAATATCAGCA
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HPC042
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GGGCAAACAGCTTGTAGCCGAAAATTGCACCGCTTGCCATGGCATTAAATCCCAAAACATTCCAGCCCCTATGGACAGCCTT
AGCGCGAGCAACTCTTTTGGGGTCGTGCCACCGGATTTAAGCCATGTGGCTGGGGTTTTGAACGCGAATTTCTTAGCCCACT
TCATCAAAGACCCCGTGAAAACGGCGAAATTGAGCCATAAGTTCAACGATGAAAGGCCCTATCCTATGCCGGCGTTTTCTCA
ATTTAGCGATCAAGATTTGAGCGATATTGTGGCGTATCTCACTTCTATTTTGCCTAAAAGTTTGAGCGATAAGGAAGTGTTC
GCACAAAGCTGTCAAAGGTGCCATAGCTTGGATTATGCTAAAGATAAGGCCTTTAGCGATCCTAAAGATCTAGCCAATTATT
TAGGCTCTCATGCACCTGATTTGTCCATGATGATTAGAGCTAAAGGCGAACATGGCTTGAATATTTTCATCAACGATCCGCA
AAAGCTT

HPC065
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GAAAAATGGAGCGGTTATAGGCGATAAAGGTTAACGCAGCTAAGAATCGGTAAGAATTTCAATTATGAAAGCAGTTTTTTA
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CAATAACCCTAACGCCAGCCAACAATCTATCGTTATCCCTTTGGAGACTTTTGCCTTGAGCGCAAGCGTTAAAGGGAATCTT
TTAGCGGTGGTGTTAGCGGACAATTCAGCGAATTTATACGACATCACTTCTCAAAAATTGCTTTTTAGTGAGAAAGGTTCCC
CAAGCACCACGATCAATTCTTTAATGGCGATGCCTATTTTTATGGATACGGTCGTGGTGTTCCCCATGCTAGATGGGCGTTT
GTTGGTCGTGGATTATGTGCATGGAAACCCTACGCCTATTAGAAACATTGTTATCAGCAGCGATAAGTTTTTTAACAATATC
ACTTACCTTATCGTAGATGGCAATAACATGATCGCTTCTACAGGGAAAAGAATACTCTCAGTCGTGAGCGGTCAAGAGTTCA
ACTATGATGGGGATATTATAGATTTGCTTTATGATAAGGGGACTTTATACGTGCTCACGCTAGACGGGCAGATTTTGCAAAT

Figure 14

GGATAAGAGTTTGAGGGAATTAAACAGCGTGAAACTGCCCTTTGCTTCGCTCAATACCATTGTATTAAACCATAATAAATTG
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HPC066

GATCACCCTATTGCTATGGGTTTTTGGCTTTTTAGCACGACTGTGGTGCTATTTGATATAGTGGTGGTTGCGGAGCGTTTTT
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CGGCGGAGTGCTTTATAACAATCAGGGCCATCTCTTCCCCTTACCCCCCAAAAAACGCAGCCCAGAAAACGAATGCGTGAAT
TGCTTGCATTGCGTGCAGGTTTGCCCCACACATATTGATATTAGGAAAGGCTTGCAATTAGAATGCATCAATTGTTTAGAAT
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GCGCCAAAAAGTGCGCCTGGTGCGTTTAAAAACGATCGCTTACATGGGGGTTATCGCTGTTGTGATCGCTCTTTTAGCCATC
ACTTCGTTTAAAAAAGAACGCATGCTCTTAGACATTAACCGCAACAGCGATCTGTATGAATTGCGCTCTAGTGGGTATGTGG
ATAACGATTATGTGTTTTTATTCCACAACACGGACAATAAAGACCATGAGTTTTATTTCAAAATTTTAGGGCAAAAAGACAT
CCAAATCAAAAAGCCTTTAAATCCTATCGCCATTAAAGCCG

HPC074

GATCAAAATAACGATTTGGCGTTTGTGGTGTGCTTGCAAATCCCTTTGAGGGTAGCGATTGAAATCAGCTCGCCTTCAAAGT
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GCGATTGTCAATTTTAGCAGTTTTGATATTAAAGAAGTGTTCCACCCCATTGTGCTTTTAACCCTAGCCTTAGCCACCTTTG
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NAAATCACTTATGCGGTGTATTTGGCT

HPC083

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AGTGTTTAAAAACCCCTATCATAGGGCATGGCATGAAGAAAAAAGCAAAAGTCTTTTGGTGTTGTTTTAA

HPC084

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CGCATCACAGACGCCACGCACATGTCTAGGGCGAATTACTATTTGCAAACAGAAAACAATTATTACGGCTTGAATATCAAGT
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TATCTAATGTGGCTTTAATGCAATCTAACAATTCCTTCGTGCCTACGATCCCTAATGAATCAAGGGAATTTGGGAACTTTGT
GTCTTCAAATTTTTCCATGTATGTCAATATGGATTTAGCCAGAGAATACAACAAGCTTTTCCACACGATCCAATTGGAAGCG
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GCTACACTTCGCCTTTATTGAGAGATTATGATTATCAAGGGCGTTTGTATGACTCCGTGTGGAATCCTAGCAGCATTTTACC
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CCAACGCAAGTTTTTAAGCTTTAACCTCTCTTATTTTTTAAGGAACAATTTTAGCAGTGGGATTAATAGCATTGTAGAAAAT
CTGCGGATTATTTAA

HPC104

ATGGATATTTATGCGTTATACATAGCGATAGGGCTTTTTACTGGCATTCTATCAGGGATTTTTGGCATTGGTGGGGGGTTGA
TCATTGTCCCTATCATGCTCGCAACCGGGCATTCTTTTGAAGAATCCATCGGCATTTCCATTTTGCAAATGGTGCTTTCATC
GTTCGTGGGATCTGTTTTGAATTTCAAAAAAAAATCGCTTGATTTTTCTTTAGGCTTGTTGATAGGGGCAGGGGGGCTGATA
GGGGCAAGTTTTAGCGGATTTGTTTTAAAAATCGTTTCCAGTAAAATTTTAATGGTTATTTTCNCGCTTTTAGTCGTGTATT
CTATGATCCAATTTGTCTTAAAACCCAAAAAAAAAGATTTTATAGCGGATAATAAACGCTACCCTTTGCAAGGTTTAAAATT
ATTTTTAATTGGCGCGCTCACAGGGTTTTTTGCCATCACTTTAGGATTGGTGGGGGGATGCTCATGGTGCCTTTGATGCAT
TATTTTTTAGGGTATGATTCTAAAAAATGCGTGGCGCTAGGGTTATTTTTCATCTTGTTTTCTTCTATTTCAGGAGCTTTTT

Figure 14

CTTTAATGTATCACCACATCATCAATAAAGAAGTTCTCTTAGCAGGGGCGATTGTGGGCTTAGGCTCAGTTATGGGCGTGAG
CATTGGGATTAAATGGATCATGGGGCTTTTGAATGAAAAAATGCATAAAATTTTGATTTTAGGGGTGTATGGTTTGTCGTTA
TTGATTATTTTATACAAACTCTTTTTTTAA

HPC115
ATGAAATGTTCGCATTGCCAGTTGGAGTTTAAAGAAAGTGAGCTTTTTAAAGAAGTGATCCATCATAAGGAATTGTATTTTT
GCTGCACGGGGTGTGCTAGAGTGTATGCGTTATTATTGGATTTGAATTTAGAGAGCTTTTATGACAAATTAAACGATTCCAC
TTTAGCCCCCGTAACGCCCCAAGATTCAATGAGCGCTTTGGAATTAGAACAAGCCCTTGAAGAAAACAATAAAAGCGATTTT
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GGGAGTTTAAGCCTTTGGAATTGGGGGTTAATGATCTAATTTTAGGGGGTTATGTGAATGTGGGCGTGCCTTTTAGCTATCA
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HPC120
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HPC130
ATGAAAAGATTTGTTTTGTTTTTATCACTCATGGGTGTTTGCGTTTGCGTTCAAGCTTACGCCGAGCAAGATTACTTTTTTA
GGGATTTTAAATCTAAAGACTTGCCCCAAAAACTCCATCTTGATAAAAAGCTTTCCCAAACAATACAGCCATGCGCGCAACT
TAACGCATCAAAACACTACACTGCTACCG

HPC133
ATGCAAAGTCTTAGTTGGCTGAATTTAGCGTTCCGTTGGCTCTTTATAACAGGGCTTGGCTATTATATAATGACTTTATTGC
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ATTCGTTTTAAGCGCTTCTTTAATCTTTGAAAAAGCCTTATCCAAGCAGTATTTACAAACCGCTAAAGATAAAATCGCCTCT
TTAAAGAATTTAAAAGTCATCGCCATTACCGGAAGCTT

HPC143
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TTATTACTTCTGGGAATATCAAAGGGCATAGAAAAGCCCTTGTGATTCAAGGCGTCTCTAATGTCGCTCAATCCCACACTGC
CTACAACGCCCTTTTAGATGATTTCAAGCTTTCTCACTTAAGCTTGAACGCAAAAGACGCCAATTTAGAAGATTTGCTTTAT
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TCCAAAACATGACTAACCACCCCCTAAAAGGGAGTTTGACTTTAAAAGGCGCTATAGAGCAAAGCCCCAAACTCTTAAAAGT
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GCGCTAAGCAAGGCACATTGAAAGCCCGCCTAAAAAACGCAAGATTCCTCAAAAATGCATTCAGCGATTTCCTCTACTCCAT
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CGAAAAAGCCATCCAACAAAACCTGCAACAAGGCTTGAAAGAAATCCTAAAAAACGACACCCTTAAAAAAGGTTTAGATCAT
TTGCTTAAAGATGATAAGCTCAAAGAAAAGCTTGAAAAAGGGCTTAAGGGGCTTTTTTAA

Figure 14

HPC144
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TGGCCG

HPC152
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CATGATGACCAATTGCGACAACCTTAAAGACTTTAACGCTAATCAAAAAGAAGTTCTAAAAGCCGCCTATCAATTCGGCTCT
AAAGAAAATTTAGGCTATGAAATGGCAGGCATTGCATGGAAAGAATCATGTGCAGGGGTTTATAAAATCAATTTTTCCGATC
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GATGGGGGAATTGCTCATTAAAGACGATGCGTTTGCTTCTGAAGTGGCTTTAAAAGAGTTGCTCTATTGGAAAACACGCTAC
CATGACAATCTAAAAGACATGATTAAATCTTACAACAAGGGCAGTCGTTGGGAAAAAAACGAGAAGTCTAACGCCGAAGCTG
AAAAATATTATGAAGAGATACAAGACAGGATCAGGCGTTTGAAAGAATCTAAAATCTTTGATTCGCAGTCTAGTAATGACCA
AGAATTGCAAAAAAGCGCTAATAGCAACCTGGATTTAGACCCTATCGGCAGCACCATGCCCCAAACTTTAGCCACCCAAAAA
TCTCAAATAGAAAAATCTCAAATAGAGGAAACCCAAGCAGAAAAACCCCAAGAAATGAAAGAGACAACTAGCGAGCAAATAA
CCAACAAGCCAGAAAAAGCAAAAGATAAACCCATGTATTTGGCTCAAATCAATAGCACTGATTTCACACCCGCTAAAAAACG
CTCTCAAAAACCGGCTAGAGTGAGCCAAAAACGCTCCTCTAAAAATAATATCAGCGTTAAAAACAACACCAAAACCGCTTCC
AAAAATTCCAAAAATAAAGAAATGTGCAAAAATTGCTCTCCAGGGCAAAGGAATGCGATTTTAGCTAACCACATCACTCTCA
TGCAAGAGCTTTAA

HPC155
GATCATTATCGTGCCGTTACCGCCTTTTGTGTTGGATTTTTHACTCACGATTTCTATTGCGCTATCGGTGTTGATTATTTTA
ATCGGGCTTTATATTGACAAGCCGACTGATTTTAGCGCTTTCCCCACTCTATTACTCATTGTAACCCTATACCGCTTGGCTT
TAAATGTCGCCACCACTAGAATGATTTTAACGCAAGGCTATAAAGGGCCTAGCACGGTGAGCGATATTATCACGGCGTTTGG
GGAATTTAGCGTGAGCGGGAATTATGTGATTGGTGCGATTATCTTTAGTATTTTAGTGCTGGTGAATCTATTAGTGGTTACT
AATGGCTCTACTAGGGTTACTGAAGTGAGAGCGCGATTCGCTCTAGACGCTATGCCAGGAAAGCAAATGGCGATTGATGCGG
ATTTAAATTCAGGGCTTATTGATGATAAGGAAGCCAAAAAACGGCGCGCCGCTCTAAGCCAAGAAGCGGATTTTTATGGCGC
GATGGATGGCGCGTCTAAATTCGTCAAAGGCGATGCGATCGCTTCTATTATCATCACGCTTATCAATATCATTGGAGGGTTT
TTAGTGGGCGTGTTCCAAAGGGATATGAGTTTGAGCTTTAGCGCTAGCACTTTCACTATCTTAACCATTGGCGATGGGCTTG
TAGGGCAAATCCCTGCTTTAATCATTGCGACAGCGACCG

HPC165
ATGAAAAAGTTTAAAAAGAAACCAAAAAGTATCAAACGATTGCATCAAAATCAAAAAACAATCTTAAAGCGTCCTTTATGGC
TCGCACCTTTACTCATCAGCGGGTTTGTTAGTGGGGTGTATGCTGATGGAACAGACATTTTGGGGCTTAGTTGGGGTGAAAA
AAGCCAAAAGGTATGCGTGCATCATCCATGGTATGCTATATGGAGTTGCGATAAATGGGAGGAAAAAACACAACAATTCACA
GGAAACCAACTCATCACAAAAACTTGGGCAGGGGGTAATGCGGCTAATTACTACCACACTCAAAACAACCAAAATATTACAG
CCAATTTAAAAAATGATAACGGCACTTATTTTTTAAGCGGTCTGTATAACTACACC

HPC183
ATGTTAGTTACTCGCTTTAAAAAAGCTTTGATCTCTTATTCTTTAGGTGCGCTCATTGTTTCATCGTTATTGGGCGTGGCTA
ACGCTTCAGCACAAGAGGTTAAAGTCAAGGATTATTTCGGGGAGCAAACTGTAAAGCTTCCTGTTTCTAAAATAGCCTATAT
AGGGAGCTATGTAGAAGTGCCTGCCATGCTTAATGTTTGGAATAGGGTTGTAGGCGTTTCGGATTACGCTTTTAAAGATGAC
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AGCTTTTAAAAAAGCTCAGCCCTGATCTTGTGGTAACCTTTGTGGGCAACCCTAAAGCGGTAGAGCATGCGAAAAAATTTGG
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GACGCTTCTAAAAAATTCGCCAAAATGCAAGAAACTTTGGATTTTATCGCTGAGCGTTTGAAAGATGTCAAAAAGAAAAAGG
GGGTGGAGCTTTTCCATAAAGCCAATAAAATTAGCGGCCATCAAGCCATTAGCTCAGACATTTTAGAAAAAGGGGGCATAGA
CAATTTTGGCTTGAAATACGTCAAATTTGGGCGCGCTGATATTAGCGTGGAAAAAATCGTTAAAGAAAACCCTGAAATCATT
TTCATCTGGTGGGTAAGCCCACTCACGCCTGAAGATGTGTTAAACAACCCTAAGTTTTCCACTATTAAAGCCATTAAAAACA
AGCAAGTTTATAAACTCCCCACAATGGATATTGGCGGGCCTAGAGCCCCACTCATAAGCTTATTTATCGCTTTAAAAGCCCA
CCCTGAAGCCTTTAAGGGCGTGGATATTAATGCGATTGTTAAAGACTACTATAAAGTGGTTTTTGATTTGAACGATGCAGAG
GTTGAACCCTTTTTATGGCATTAA

HPC186
ATGGGCGGATTCACAAGCATATGGCATTGGGTCATTGTTTTATTAGTGATTGTGTTGTTGTTTGGGGCTAAAAAGATCCCAG
AATTGGCTAAGGGTTTAGGCAGTGGGATTAAGAATTTCAAAAAAGCCGTGAAAGACGATGAAGAAGAGGCTAAAAACGAGCC
AAAAACCCTAGACGCTCAAGCAACGCAAACCAAAGTGCATGAGAGTAGCGAGATTAAAAGCAAACAAGAAAGTTAA

HPC188
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ATGCCAATGGCTTTAAAATCCAAGAGCAAAGCCTAAATGGCACGGCTTTAGGCTCGGCGTATGTCGCTGGGGCTAGGGGTGC
TGATGCTTCCTTTTATAACCCGGCGAATATGGGCTTTACTAACGATTGGGGTGAAAACAGAAGCGAATTTGAAATGACCACC
ACCGTGATTAACATTCCG

HPC190
TTGGAATTGAAAAAAATCGCCCTTATTTTAGATGGCATTGTAGCAAAAAATTTTTTAGACTTGGTGCTAAGGCATTATTCTA
ATCATAATTTTTATATAGTGGTTGTCAAAAATGAGAGCCTTATCCCTAAAAATTACCCGAGCACTTTCGCTTTTTATTGTTT
TGATGCGACTTCTAGTTTCAGGCTTTTGCAAGTGTTAAACGATGAGGTGAGCGATGCGTTTTTAATCATACAAGATTTTAAA
GAACAGCGCATCATTCATAAAATCATTCAAACCCATTTCAAACGCATGCGCGTGGTTTTGAGCGTGAAAAAAGATGGTGAAA
AAACTTTAGAAAATAATGAAGAAAATAAAGATGAAAAGCTTATTTTGATTGATGAATTTGAAGTTTTAGCCAATAAATTCAT
TTCTCGTTTGCCTAATATCCCTAGCACCCCTAGAGAATTTGGGTTAGGCAAAGGCGAGATCATGGAGATTGATGTGCCTTTT
GGGAGTATTTTTGCTTACAGGCATATTGGCTCTATCAGGCAAAAAGAATACAGGATTGTAGGGCTTTATCGCAACGATGTTT
TGTTGCTCTCCACTAAATCTTTAGTTATCCAGCCACGAGACATTCTTTTAGTGGCGGGTAATCCGGAAATTTTAAACGCGGT

Figure 14

GTATCTTCAGGTCAAAAGCAATGTCGGGCAGTTCCCAGCCCCCTTTGGTAAGAGCATTTATTTATACATTGATATGCGCTTA
CAAAGCCGAAAAGCAATGATGCGCGATGTGTATCAAGCCTTGTTTTTGCACAAACATTTAAAGAGCTACAAGCTCTACATTC
AGGTTTTACACCCCACTAGCCCTAAGTTTTACCATAAATTTTTATCGCTAGAAACCGAAAGCATTGAAGTGAATTTTGATTT
TTATGGGAAAAGTTTTATCCAAAAACTCCATGAAGACCACCAGAAAAAAAATGGGTTTGATTGTGGTAGGCAGAGAGCTTTTT
TTATCTAAAAAACACCGAAAAGCCCTATATAAAACAGCCACCCCGGTTTATAAAACCAACACTTCCGGCTTGTCTAAAACCT
CTCAAAGCGTGGTGGTGTTGAATGAAAGCTTGGATATCAATGAGGACATGTCTTCAGTGATCTTTGATGTGTCTATGCAAAT
GGATTTGGGCTTGTTGCTCTATGATTTTGACCCTAACAAGCGCTATAAAAACGAGATTGTCAATCATTATGAAAATTTAGCC
AACACGCTCAACCGCAAGATTGAGATTTTTCAAACCGATATTAGAAATCCTATCATGTATCTCAATTCTTTAAGAAATCCCA
TTTTGCATTTCATGCCTTTTGAAGAGTGCATCACGCACACGCGCTTTTGGTGGTTTTTATCCACTAAAGTGGAAAAATTAGC
GTTTTTAAACGATGATAACCCTCAAATTTTTATCCCTGTAGCGGAGTGA

HPN013

ATGAAAGCGTTGAAGACTTTTTTAAAAAAATCCCTTATTCTGTTACTAGCAATTGCCTTAAACCACTTAAACGCTGTGGCTA
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CACTATTACTGAAAGGATCAAGCTCGCTCAAGACACATTAGATAGGGCTAATCAGACGCTTAATTCCATCAACAAAGTGAAT
GATGTTTTGAACAAAACCAATCAATTTCTAACAGGCAGTATTTTAAGCATCCCCAATCCCATGCAGTATGTAGAAAAAATCC
AAAGTTTTGCCAAGCAAGTTCAAGCCAATACTGAAAGGATCAAAGAAAATGCACAAAACTATGATATACGCAATCAAATTGC
AGCCAAACGCATCTCTGAAAAATGCCCTGAACTCAATTGGGATGTCAGTCAAGACGCGAGCCCTACAGAGAAAAACTTACAC
CAATTTTTCACGAGCAAGGGGAAAGAAAGCGCTAACACAAAGGCTCTAAAGGATTTTGCTAACGCCATAGGTAACACTCAAA
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AGAGCTGAAAAAGAAGAATTAAAAAGACAAATCGCTTCAAATGTGTATGCGAAAGTCAAACAGCTTGTTGTAGCTTCCCAAG
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CAAGAAAGAAAACAGAAATGGCAAAAGCGAGTGCATCCCTAACATGCTCAATGTTAATCGCTTAAAAGCGCAATTTGATGAG
CTTAATTTAGATTATAGTAGGGATATTGCTGGTAAAAAAGGTGAAGCAGCCGCTAAAGTGTTCAATGACTACAAACACCGAT
TCCAACAATTAAGCGTAGAAACTGCTTTAGAAATCGCTCAAAATTTAAGTTTTATGAATAAGACGCTAGGTTTAATGGTGCA
AATGCAAAGCTATGCATTCAAGCAACAAATGGGCTATTTTGAAGATATTATTCCTGCTGACGCCCTAAAAGATGACAAAGAG
CATCAAGAAAATCTTGAACAAAAACAACAAGAAATAGAGAAAGTCTATAGGGCTAAATTAGACGCTTATGGTTTCCCTAATG
GTAGTGTAGGAAAGGCAAGTGGCGTGAATTCAAATAGTAATAATGAAGCCCCAAGCTCTGATAATATCCAGTCGTTTAATCC
GTATTGA

HPN048

GTGCAACCGATGAAATCTAAAAAACTTTATTTGGCTTTAATCATAGGGGTTTTATTAGCGTTTTTAACCCTATCTTCATGGC
TGGGTAATAGCGGTTTAGTGGGGCGTTTTGGGGTGTGGTTGCCGCACTCAATAAAAAATATTTTGGGCATCTTTCATTCAT
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CATAATAGAAAATGACAACAAAACAGAAAACCAAAAAACCCCCAACCACCCTAAAAAAGAAGAAAACCCACAAGAAAACACG
CAAGAAGAAATGATAGAAGGAAGGATAGAAGAAATGATAAAGGAAAATCTAAAAAAAGAAGAAAAAGAAGTGCAAAACGCTC
CAAACTTTAGCCCAGTAACCCCCACAAGCGCTAAAAAACCCGTTATGGTTAAAGAATTGAGCGAAAATAAAGAGATATTAGA
CGGATTGGATTATGGCGAAGTGCAAAAACCCAAAGATTATGAGCTTCCCACCACGCAATTATTGAATGCGGTTTGTTTGAAA
GACACTTCTTTAGACGAAAACGAGATTGACCAAAAAATCCAGGATCTATTGAGCAAACTGCGCACCTTTAAAATTGATGGCG
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GGCATTGAAATCCCTAACAGCCAAAGCCAAATTATTTATTTAAGAGAAATTCTAGAGAGCGAATTGTTTCAAAAATCCAGCT
CGCCCTTAACTCTAGCTTTAGGCAAAGACATTGTGGGTAACCCTTTCATCACGGATTTAAAAAAGCTCCCCCATTTGCTCAT
CGCTGGCACGACAGGAAGCGGTAAGAGCGTGGGCGTGAATGCGATGATTTTATCCTTACTTTATAAAAACCCTCCCGATCAA
CTCAAATTAGTGATGATCGATCCCAAAATGGTAGAATTTAGTATTTATGCGGATATCCCTCATTTGCTCACGCCCATTATCA
CCGACCCTAAAAAAGCTATTGGGGCTTTGCAAAGCGTGGCTAAAGAAATGGAACGCCGGTATTCTTTAATGAGCGAATACAA
GGTTAAAACCATTGATTCTTATAATGAACAAGCCCCAAGTAACGGCGTTGAAGCGTTCCCCTATTTGATTGTGGTGATTGAT
GAATTAGCGGATTTAATGATGACAGGGGGCAAAGAAGCGGAGTTTCCTATCGCTAGAATCGCTCAAATGGGGCGCGCGAGCG
GCTTACACCTCATTGTAGCGACCCAACGCCCAAGCGTGGATGTCGTAACCGGCTTGATTAAAACCAACTTGCCTTCAAGGGT
GAGTTTTAGGGTAGGCACTAAGATTGATTCTAAAGTGATTTTAGACACTGATGGGGCGCAAAGCTTGTTAGGAAGAGGCGAT
ATGCTCTTTACCCCCCCCAGGAGCGAACGGGTTAGTGCGCTTGCATGCCCCCTTTGCCACTGAAGATGAAATCAAAAAAATCG
TGGATTTTATTAAAGCCCAAAAAGAAGTACAATACGATAAAGATTTCTTGCTAGAAGAATCACGCATGCCTTTAGACACCCC
TAATTATCAAGGCGATGACATTTTAGAAAGGGCTAAAGCGGTGATTTTAGAAAAAAAGATCACTTCTACGAGTTTTTTACAA
CGCCAATTAAAAATCGGCTACAACCAAGCCGCTACCATTACTGACGAATTAGAAGCTCAAGGCTTTTTATCCCCAAGAAACG
CTAAAGGCAACAGAGAGATTTTGCAAAACTTTTAA

Figure 14

HPN091
ATGGGTAATCATTTTTCTAAATTAGGATTTGTTTTAGCCGCATTAGGAAGCGCGATAGGTTTAGGGCATATCTGGCGTTTCC
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TATCGCTGAAATGCTATTAGGACAAAGCACTCAAAAAAATGTAACAGAAGCTTTTAAAGAGCTTGACATTAACCCCAAAAAA
CGCTGGAAATACGCAGGGCTTTTGCTTGTTTCTGGGCCATTAATACTGACTTTTTACGGCACGATTTTAGGTTGGGTGCTTT
ATTATTTGGTGAGTGTTAGTTTTAATTTGCCTAACAATATCCAAGAATCTGAACAAATTTTTACTCAAACTTTGCAGTCTAT
AGGGCTACAATCCATAGGGCTTTTTAGCGTTTTATTGATAACCGGATGGATTGTTTCTAGGGGGATTAAAGAAGGCATTGAA
AAGCTCAATTTGGTTTTAATGCCCTTACTCTTTGCTACTTTTTTTGGTTTGCTTTTCTATGCGATGAGCATGGATTCTTTTT
CTAAAGCTTTTCATTTCATGTTTGATTTCAAACCAAAAGATTTGACCTCTCAAGTGTTCACTTATTCCTTGGGGCAGGTTTT
CTTTTCCTTAAGCATCGGTTTAGGGATCAATATCACTTACGCTGCGGTTACGGATAAAACGCAGAATTTGCTTAAAAGCACT
ATTTGGGTGGTTTTATCAGGAATTCTAATTTCTCTTGTGGCAGGACTTATGATTTTCACTTTTGTGTTTGAATATGGGGCGA
ATGTCTCACAAGGCACAGGGTTAATCTTCACTTCTTTACCGGTGGTTTTTGGCCAAATGGGAGCGATAGGCATTCTTGTTTC
GATTCTTTTCTTGCTCGCGCTCGCTTTTGCTGGCATCACTTCTACGGTGGCTTTATTGGAGCCAAGCGTGATGTATCTTACC
GAAAGGTATCAATACTCTCGTTTTAAGGTTACTTGGGGTCTTGTAGCACTAATTTTTGTGGTAGGCGTGGTGTTGATTTTCT
CGCTCCATAAGGATTATAAAGATTATCTCACTTTCTTTGAAAAAAGTCTTTTTGATTGGTTGGATTTTGCATCAAGCACCAT
TATCATGCCTTTAGGCGGGATGGCAACCTTTATTTTTATGGGTTGGGTTTTGAAAAAAGAAAAATTGCGTCTTTTGAGCGTG
CACTTTTTAGGCCCTAAATTGTTTGCAACTTGGTATTTCTTGCTTAAATATATCACCCCTTTAATTGTGTTTTCCATTTGGT
TGAGCAAGATTTATTAA

HPN132
GTGGTCTTTAAAATTTTAGGTTTATGGTTAGGGGTGTTTTGTTTCCTTGAGGCTACGCCTTATTTATACTTGGGCGAAGAGC
CTAAATATAAAGACAATTTCACGCATTTTGAATACGCTAACCCTAACGCTAAAAAGGGCGGTGTTTTAAGGAATGACGCCAT
AGGGACTTTTGATAGCCTTAACCCTTTCGCGCTTAAAGGCACTAAAGCTGAAGGCTTGGATCTGATTTATGACACTTTAATG
GTGCAAAGTTTAGACGAACCTTTTGCCGAATACCCCTTGATCGCTAAAGACGCAGAAGTGGCTAAGGATAACAGCTATGTGA
TTTTTACGATAGATAAAAGAGCGAGATTTAGCAATAACGCTCCCATTTTAGCGAGCGACGTGAAGTTTAGTTTTGATACGAT
CATGAAATTAGGATCGCCTATTTATAGGCAGTATTACCAAGATGTTAAAAAGGCGGTTGTTTTAGACAAACACCATGTTAAA
TTCATTTTCAAAACCACTGAAAATAAAGAGTTGCCTCTCATTTTAGGGCAGTTGCAGATCTTTTCCAAAAAAGCGTTTCAAG
AGGATTATTTTGAAAAAAACCCCTTACTCATTCCTGTTTCTAGCGGCCCTTATGTGATCGCTTCTTTTGATGTGGGCAAGAA
AATCACCTACCAAAGAAACCCTAATTATTGGGCGAGGAATTTGCCTAGCAGAAAGGGGCAATTCAATTTTGATCAAATCAAA
TTTGAGTATTACAAAGACGAAACCATCGCCTTACAGGCTTTTTTAAGTGGGGCGTATGATTGGCGTCTTGAAAGCACGGCTA
AGGTTTGGGCTAGGGGCTATGTGGGGAAAGCTATGGACAATAAAGAGATTACGAAATATTTGATAGCCCACAAAATGCCAAG
CGGCATGCAAGGGTTTTTCTTCAACACGCGCCGAGAAATTTTCAAGGATAAAAGGGTGCGTGAAGCCTTATTTTATGCGTTT
GATTTTGAATGGGCGAATAAAAATTTGTTTTTTTCGCAATACAAGCGCACCACCAGTTTTTTCAGTAACTCTATCTATGCGT
CCCCTCCCCTCCCAAGCCCTGAAGAAAAAGCCTTGCTAGCCCCTTATGAAAAGAGTTTGGATGAAAGGGTTTTTAAAGAGCC
TTATGTCGTGCCTAGAACCGATGGAGTTGATGTTTTAGGCTATAATTTGAGG
GAAAATTTAAAATACGCCCAAAAGCTTTTAGAGAGCACGGGCTTTTCTTACAAAAACATGCGTTTGGTGGATAAGAATAACA
AGCCTTTCAGTTTCACTTTGCTTTTAAATAGCCGGCATTTGAAAGACTGGCCCTAGCTTTTGCTAAAAACTTAAGGGTGTT
AGGGATTGAAATGAAAATCCAAAGAGTGGATTTAAGCCAGTATGTCAATCGGATCAAAAGCTATGATTTTGACATGATTGTA
GGAGTGATTGGCCAATCGTCTTTCCCAGGTAATGAGCAGCGCTTTTATTTTGGTTCTTTGAGTGCGAAAGAAAAAGGCACAA
GGAATTATGCGGGAATCTCTAGTAAAGCGGTAGATGATTTGATTGAAAAAATCATTAACGCTAAAGATTACAAGGAACAATT
GGCCGCCATTCAAGCGATGGATAGGGTATTGTTGTGGGGGTTTTATGTGATACCGCATTTTTATTTGCCTAATTACAGGATC
GCAGCGTATAATTACATTGGCATGCCTGAAATCAGCCCTAGCTATGGATTTTCGCCGTATTTGTGGTGGATAAAAGAAAAGG
ATCTTCAATGA

HPN137
ATGAAAAATCAACACAAAAATCCCCTAACAAAGCTTTAATGAAAACTTATCCATATAACCATTTTTTATTTTTCTGCTTTA
TTCTAGGAGCGTTTTTATTAGGTTTGCTCAGTCCAGCTTATGCTTTAAGTATTATCACCACTAAAGAAATTGACGCTAATTT
GCTTAATGGAGCGATAGAAAGCAGGGTGGTGTTAGGCAAGAGGGTGTTTAAAGTAGAAGCTCATGGGTTTTATTTTAGAAAC
AATGCGACTAACAGCATAGATATAGAAATCACCAGTCTTTTAAGAGACAATCAATCGTTTCCTTTGACTAGCAGTGCTAAAA
CCAGTTTAAAAATACCTCCTAACGCCAAGATTAAAAAATCCACTATCCTTGTTTTGAAAGGCGAGAACGCTGAAGAAGTGGC
TAAGATTTTAGGCGTTAGCAAAGAAGAATACCAAAAGCTAGAAAACATCGCTCAAACCAAAGCGGCTAATGACCCTATGTAT
GCTAACACGCCTTTTAGTAATGGTTCTGATAGTTCCTTTTACGATAACAATCCTAATAGCCCTAGCAATAACGCTATCAATG
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AAATGGGAGTCATTCAAATAATAATGCAATAGGCAGTGGTATTGATACAGATGGCGTGTTAGGGGTGGATGGGGTGAATGGC
TCTAGTTCTTCAAGTGGCGGCTCTGTAGGGGGTTATGAGAATAATTTCACTAATCATGGCTCTACTAACAATAACACAGGAG
GGTATGACAATTTTAATAATGGCAGCTCAAGTGGTGGGAGTTTAGGGAATGGGGGGCTTTTCCCTATTCCTTTTGGTAATGG
AGACACAAACAATTCCAATAATTCCACTAACACCACTAGCCCAACTAATGGCAGTAGTTCTAATAACGCCACTAATCCTAGT
TCGCAAGAAAACAATTACTCCAGCCAGTATTGTAAAGTGCCAGAGTTAAGCCCCAACAACACGATGAAACTAGATGTTATCG
CTAAAGATGGCTCTTGTATTTCTATGAACGCTTTAAGAGATGACACTAAATGCGCTTATAGATACGATTTTGAAGCCGGTAA
AGCCATCAAGCAAACGCAATACTACTATGTAGATAGGGAAAATAAAACGCAAAATATCGGTGGTTGTGTGGATTTACAAGGC
GCTCAATACGCCATGCAACTTTACAAAGATGACAGCAAATGCGCCTTACAAACCACGAGCGATAAAGGTTATGGTATGGGGA
AAACGCAAACCTTTCAAACTGAAATCGTGTTTCGTGGGATGGACAATTTAATCCATGTCGCTGTGCCTTGCAGCGATTATGC
AAGGGTGCAAGACAGGATTGTTAGGTATGAAAAAAATGATAAAACCCAAACCTTAACGCCTATAGTGGATCAGTATTATAAT
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GCGGTCAATGGGAATACAATGACGCTAAATTAGAAGCCAAAAGACCTACAATGCTAAAAAGCTATAACAAGCTTAATGGAGA
ATGGGTAGAAGTTACGCCCTGTAATTTTGAAGCAGGGATTAAAAGCGGTGCGGTTGTTAGCCCTTATGTGATGGGCGTGCCT
AGTTCTAAAGTCTTAAGCGATATTACTACAAGCCATTATTTTAGGATAGAAAGGAAAAATTATGGTGAGAGAGAACAATGCC
AAAAACTTTATGGAGTCAATCGTTGCCAACCGCAATATTCCATACTGATCCTAGTATCACCGATTGGAGCGCCACTTACAAA
ACCACTACCACCCAAACCACTCAACCTTATTTACGCCCAGCCCAAGATAATGAAAAACACCCCACAACCTATAATCTTATCA
CCACTCAAACCACCATCAACAGGACTCAAAGCGTTTTGA

HPN172

Figur 14

ATGTTGGGGAGCGTCAAAAAAGCGGTTTTTAGGGTTTTGTGTTTGGGGGCGTTGTGTTTATGCGGGGGGTTAATGGCAGAGC
AAGATCCTAAAGAGCTTATATTTTCAGGTATAACTATTTACACGGATAAAAATTTCACTAGAGCTAAGAAATATTTTGAAAA
AGCTTGCAAATCAAACGATGCTGATGGCTGTGCAATCTTAAGAGAGGTTTATTCTAGTGGTAAAGCCATAGCGAGAGAAAAC
GCAAGAGAGAGCATTGAAAAAGCTCTTGAACACACCGCTACTGCTAAAGTTTGTAAATTAAACGATGCTGAAAAATGCAAGG
ACTTAGCAGAGTTTTATTTTAATGTAAACGATCTTAAAAATGCTTTAGAATATTACTCTAAATCTTGTAAGTTAAATAATGT
TGAAGGGTGTATGCTGTCAGCAACTTTTTATAACGATATGATAAAGGGTTTGAAAAAAGATAAAAAAGATCTAGAATATTAT
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ATTTCAAAAAAGCTTTTGAATATTCTGCCAAAGCTTGTGAGTTGAACGATGCTAAAGGGTGTTACGCTCTAGCAGCGTTTTA
TAATGAGGGTAAAGGCGTGGCAAAGGATGAAAAGCAAACGACAGAAAACCTTGAAAAGAGTTGCAAGCTAGGATTAAAAGAA
GCATGCGATATTCTCAAAGAACAAAAACAATAA

Figure 14

HPC004
ATGAATAAAAACAACAACACGAATCTTATTTTAGCGATCGCTCTGTCTTTCTTGTTTATCGCTCTTTATAGCTATTTTTTCC
AAAAACCAAACAAAACAACAACCCAAACCACAAAGCAAGAAACAGCCAACAACCACACAGCAACAAGTCCTAACGCGCCCAA
CGCCCAAAATTTTAGCGTTACTCAAACCATCCCCCAAGAGAGTTTGTTAAGCACGATTTCTTTTGAGCATGCCAGGATTGAA
ATTGATTCTTTAGGGCGCATCAAACAGGTTTATCTCAAGGATAAAAAGTATCTAACCCCTAAACAAAAGGGCTTTTTAGAGC
ATGTGAGCCATCTTTTTAACCCCAAAGCTAACCCGCAACCCCCCCCTAAAAGAGCTCCCCCTTTTAGCGGCCGATAAACTCAA
GCCTTTAGAAGTGCGTTTTTTAGACCCCACGCTCAATAACAAAGCGTTCAACACCCCTTATAGTGCTTCAAAAACCACTCTT
GGGCCTAATGAACAGCTTGTTTTAACCCAAGATTTAGGCGCTCTTACCATCATTAAAACCCTGACTTTTTATGATGATTTGC
ATTATGATTTAAAAATCGCCTTCAAATCGCCTAACAATATTATCCCTAGCTATGTGATCACTAATGGTTACAGACCGGTGGC
TGATTTGGACAGCTACACCTTTTCGGGCGTGCTTTTAGAAAACAACGACAAAAAAATTGAAAAAATTGAAGATAAAGACGCT
AAAGAAATCAAACGCTTTTCTAACACCCTCTTTTTATCCAGCGTGGATAGGTATTTCACCACTTTGCTTTTCACTAAAGATT
CTCAAGGTTTTGAAGCCTTAATTGATTCAGAAATCGGCACTAAAAAACCCTTAGGGTTCATTTCCCTTAAAAATGAAGCGAA
TTTGCATGGTTATATTGGCCCTAAAGATTACCGCTCTTTGAAAGCGATTTCACCCATGCTCACTGATGTGATAGAGTATGGT
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AAACATGGGGCCAACCCGCTAGGGGGTTGTCTGCCCTTAATCTTACAAATCCCGGTGTTTTTTGCGATTTATAGAGTGCTTT
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GCTTCTTATGGGAGCGTCTATGTATTGGCACCAAAGCGTTACGCCAAACACCATGACCGATCCCATGCAAGCGAAGATTTTT
AAACTCTTACCCCTATTATTTACAATCTTTTTAATCACTTTCCCTGCAGGGTTAGTCTTGTATTGGACCACAAACAACATCC
TTTCGGTGTTGCAACAACTCATTATTAATAAAGTTTTAGAGAATAAAAAACGAGCGCACCGCGAAAACAAAAAGGAACATTG
A

HPC010
GTGAGGCAAGAAAAGTATTTTTTGACTTCTTCTTTATCGCTTTTATCGTTTTTATTATGTCCTGTAGAAGCTTTTGATTATC
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TGAAAGTTTTATAGATATTGTAACTTTAGCACAAGTCAAAGTCAATTTACTCCCTAAAGGCACCGAAAACCATAGGCTCTCT
GTTTCTTTGGGTGGGGCGATTGCAGCCATTCCTTACGATAAGACTAAATATTATATTAACCAGGCTAACGGGAAGGTTTTTG
GCTCAATTGTGGAGAATTTCATTGGGGGCTATCATGGATACTTTTTTAACAAGTATCTTGGCCCTGCTTATGCGGGGACTTC
TCAATCAGCGAGCTATCATGCAAGGCCTTATGTGGTGGATACCGCTTTTTTACGATACGATTACAAAGATGTTTTTGGGTTT
AAAGCGGGGCGCTATGAAGCGAATATTGATTTCATGAGCGGATCGAATCAAGGGTGGGAAGTGTATTATCAGCCCTATAAGA
CTGAGACGCAAAGGTTAAGGTTTTGGTGGTGGAGTTCTTTTGGGAGAGGTTTAGCGTTTAACTCTTGGATTTATGAGTTTTT
CGCGACCGTGCCTTATTTGAAAAAGGGAGGCAATCCTGATAACAGCAACGATTTCATCAATTATGGCTGGCATGGGATCACC
ACAACCTATTCTTATAAAGGTTTAGACGCTCAATTTTTTTATATT

HPC012
ATGAATTTTTTTAAAATCCTTTTAATGGAATTAAGGGCTATTGTTTCTCATAAAGGCGTTTTATTAATCCTTATAGGCGCTC
CTTTAATCTATGGCTTGTTATACCCTTTGCCTTATTTAAAAGACATCGTAACGCAGCAAAAAATCGCCCTTGTAGATGAAGA
CAATTCCTTCCTTTCTAGGCAATTAGCCTTCATGGCGCAAAGCTCCAACGAGTTAGAAATCGCTTTTTTTAGCCCCTCTATG
CTGGAAGCCAAAAAGCTTTTAAAAGAAGAAAAAATTTATGGGATCTTGCATATCCCTTCGTATTTTGAAGCCAATATCCATA
AGCAGGTGCCTGTAACGATAGATTTTTATGCGAATTCCAATTACTTTTTGATTTATGGCACCTTAGCGAATGCGGTGGTGGA
GAGCATCAACGCTTTAAATGATGAGATAAGATTCAAACGCAACGCCCAAATAGAAGAAGCTGAATTAGGGACAGACGGGATT
AAAATCAGGCCTATCGCTTTGTATAACCCTAGTGAGGGGTATTTGAATTACGCGCTCTCTAGCGTGTTTATTTTCAYYTTAC
ACCAGGTGATGCTCATTGCAAGCAGCATGTTTACTAGCTCTAGGCGTTTGGAATTAGCCCTTTTAGATAAAAAGCAAATCGC
TTTAAGGCTGTGCGCAAGACTCTTGGTGTTTATGGCAGCGTTTAGCGKTTTTGTTTTGTTGTATTTTGGGGCGCTGTTTTCT
TTTTATGGGATCGAACGGCATGCGAGTGCTTTAATGGTGTTTTTGAATAGCTCCATATTCATGCTTGCAACCTTGAGTTTGG
GGTCGTTTTTAGGCGCATGGATCAAAAATGAAGCCCACACCACTCAAATCGTTTTGATTTCTTCTTTGCCCTTGATTTTTAT
GATGGGTTTTGTGTGGCCTTTTGAATCCTTGCCCTCTTATTTGCAGGTTTTCGTTCAAATAGTGCCTGCTTATCATGGGATC
AGTTTGTTAGGGCGATTGAATCAAATGCATGCGGAATTTATAGATGTTTCTGTCCATTTTTATGCGCTTATTGCGATTTTTA
TTGCGAGTTTTATAGGGAGTGTCTTTAAACTCAGCTCTTTAAAGAAAGCTTGTGAAAACGCTTAA

HPC013
ATGAAAGCGTTAAAGATTTTTTTAAAAAAATCCCTTATTCTGTTGTTGGCGATTGCTTTAAGCCACCTGAACGCTGTGGCTA
TGATTGTGGATAATCCTACGCAGAATATCTGGCAACAAGCAAAAGACGCTATAGACAAGTCTCGCTTTGTTCAACAGGTCAA
TCATTGGGCTGACCAAATCAAAAAATACCAAGATATGATAGAAAAAGCTCAATCAACCATTAACCAACTAAATAAAGTGAAT
GATATTTTACTGAAAACCAATCAGTTTATGAATGGTTCTATTTTAAATATCCCTAACCCTATGGGTTTAGTAGAAAATGCAA
CTCAAATTGCCAAGAATGTAAAGTCAAACGCTCTCGCCCTACAAGAAAGCGCTAAAAACTACAATCTAGCCGAAAAATTTTT
ATTACGAAATATTGCTAGCAAATGCCCTGAATTAGATATGAATAAAATTAACCCAAAAACAAAAGAGATTTTTTTCTCCGAT
AAGGGAAAAGAAAAGAGTGCCGCTAGACAAGCTTTAGAAAATTTAGCTAATGCACTTGGAAATACACAAATTACAACCACTC
AACATATAACAACAAGTTTAAGTGGTAGGGCTTTYAGCAGACTTYATTTGCAAAACAAAAGAGCAAGAACTTTTAGCAGAYA
AAAAAGCAACAATACCTAG

HPC024
ATGATGTTTTCTTCAATGTTTGCTTCGTTAGGGACTCGTATCATGCTGGTCGTGTTAGCCGCTCTTTTGGGTTTAGGGGGGC
TTTTTATTGGTTTTGTAAAGGTTATGCAAAAAGATGTGCTAGCGCAACTCATGGAGCATTTAGAAACCGGGCAATACAAAAA
GCGTGAAAAAACGCTCGCTTACATGACAAAACTTCTTGAACAGGGCATTCATGAATATTACAAAAGTTTTGACAATGCTACT
GCAAGAAAAATGGCGTTGGATTATTTTAAACGCATCAACGACGATAAAGGCATGATTTATATGGTGGTGGTGGATAAAAACG
GGGTGGTGCTGTTTGATCCG

HPC034
ATGAAAAAATTGGTTTTAATCATCTTTTTAACGCTAACACTTTCAATATCTGCAAAAGAAGTGAAAATAGTGTTTTTAGAAA
CTTCAGACATTCATGGGCGGCTTTTTTCGTATGATTATGCGACTGGCGAGCAAAAACCCGATAACGGCTTGACAAGGATTGC
GACTTTAATCAAAAAGCAAAGGGCTGAAAATAAAAATGTGGTTTTGATTGACAGCGGGGATTTGTTGCAGGGCAATAGCGCG

Figure 14

GAGTTGTTTAACGATGAGCCCATTCACCCGCTCGTTTTAGCCGAAAACGATTTGAAATTTGATATTCGTGTGCTTGGGAATC
ACGAGTTTAATTTCAGTAAGGATTTTTTAGAGAAAAACATTAAGGGGTTTAATGGTGATGTCGTGAATGCGAATATCATCAA
GACTATAGACAATAAGCCGTTTGTAAAGCCTTATGCAATTAAAACAATTGATGGCGTGAGGGTGGCGGTTGTGGGGTATGTG
GTGGCGCACATCCCCACTTGGGAGGCCGCTACGCCTGAACATTTTGCAGGTTTAAAGTTTTTGGACGCCAAAGAAGCGTTAA
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AATATTACGCAAAAGCCGATGTTTCAGCGGCCGCCTTATTCAATTTTGGGGCCAATTTGAAAAAAGGGCCTTTCAAAAGAAA
AGATGTCGCCTACATTTACAAGTTCGCTAACACGCTCATTGGAGTGGAGATAACGGGTGAAAATCTGTTGAAATACATGGAA
TGGTCGTATCAATTTTACAATCAGTTGCAACCAGGCGATTTAACGATCAGTTTTAATGAAAATATTCGTGGTTATAACTTTG
ATATGTTTTCTGGCGTGAAATACCAGGTTGATGTTACAAAACCCGCC

HPC036

TTGGGTATCAATATGTGTTCTAAAAAAATAAGAAATTTCATTTTATGCTTTGGTTTTATTTTAAGCTTGCACGCTGAAGAGA
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AGAAAACAAGGAAGTTAAAAAGAATATTGATGAAAAAAGCCTGCTTGAAGAAATCCATAAGAAAAAACGCCAGCTTTACATG
CTCAAAGGGGAATTGCATGAAAAAAATGAATCCATTTTATTCCAACGAATGGCTAAAAACAAGAGCGGTTTTTTTATAGGCG
TAATTCTTGGCGATATAGGGATTAACGCTCATCCTAACACCCGATCTTATGAGAGCTTTGAACCTTTAAGCAACATTCAAGA
TTCTCCTTTATTGTATGGCTTAAGGAGCGGGTATCAAAAGTATTTTGCTAACGGGATTAGCGCCTTACGCTTTTATGGGGAG
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AAATTTAAAAGAGATTAAAGGGTATTCACAGCCTAACGCTTTTGGATTAGTGCTAAATTTAGGGGTGAGCATGACGCTTAAC
CTCAAACACCGCTTTGAATTAGCCTTAAAAATGCCTCCCTTAAAAGAAACTTCGCAAACTTTTTTATATTATTTTAAAAGCA
CTAATATTTATTATATTAGTTACAACTATTTATTGTAA

HPC039

ATGTCAGAAAAAGAAAGACTGAATGAAGTGATCTTAGAAGAAGAAAATAATGGGGGCGGCACTAAAAAGGTGTTTTTGATCG
TGGCTATAGCCATTATCATTTTAGCGGTGCTTTTAATGGTGTTTTGGAAAAGCACGAGAGTCGCTCCTAAAGAGACTTTTTT
ACAAACCGATAGCGGGATGCAAAAAATAGGCAACACTAAAGACGAGAAAAAAGACGATGAGTTTGAAAGCTTGAATTTGGAT
CCTTCCAAGCAAGAAGACAAGCTAGACAAAGTAGCGGATAATGTTAAAAAACAAGAAAATGATGCGTTTAACATGCCCACTC
AAACCAATCAAACTCAAACGGAGATGAAAACAGCAGAAGAAACGCAAGAAGCTCAAAAAGAATTAAAAGCTGTTGAGCACAC
TAGCGCTCAAAAAGAATCTCAAGCTGTGGCTAAAAAAGAAACCCCCCATAAAAAGCCCAAAGCAACCCCTAAAGATAAGGAA
GCTCATAAAGATAAAGATAAGCATGCGGTTAAAGAGCTAAAAGTCAAAAAAGAAGCTCATAAAGAAGTTCCTAAAAAAGCCA
ATTCTAAAACCACTCTTACTAAAGGGCATTATTTGCAAGTGGGGGTTTTTGCGCACACGCCCAATAAAGCCTTTTTGCAAGC
GTTTAACCAATTCCCCCATAAGATTGAAGATAGGGGAGCAACGAAGCGCTATCTCATAGGCCCTTATAAGAGCAAGCAAGAA
GCCTTAATGCATGCTGATGAAGTCAGCAAAAAGATGACTAAACCGGTTGTCATAGAAGCGCATTAG

HPC048

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TACGCCCTTTTATAGGGGATTTTGGGCTTTATGCGCTGATAACGCTTATGGTAGTTATTTCTTATTTGATTTTATTCAAACT
ACCCCCTAAAAGCGTTTTTTATCCTTATATGAACAAAACACAAAACCTTTTAAAAGAGATTTACAAACAATGCCTACAAGCC
TTTAGCCCTAATTTTAGCCCAAAAAAAGAGGATTTTGAAAACACCTTATCAGATCTTCAAAAAAAAGAAACCAACAACGACA
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AAAGAGAACCCATGCCCACAAAAGAAACTCTTACGCCCGCCACACTCAAACCTATCATATCAGCACCCGTCATGCCCGCATC
TGCACCCAACCTAGAAAATGACAACAAAACAGAAAACCAAAAAACCCCCAACCACCCCATAAAAGAAGATGATTTACAAGAA
AGCCCACAGGAAAACCCACAAAAAGAAAATCAAAAAGAAAATATAGAAGAAAAAGAAAATCTCAAAGAAGAAGAAAAAGAAA
CGCAAAACGCTCCAAACTTTAGCCCACTAACCCCCACAAACGCTAAAAAACCCGTTATGGTTAAAGAATTGAGCGAAAATAA
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GTTTGTTTGAAAGAAACTTCTTTAGACGAAAACGAGATTGACCAAAAAATTCAGGATCTATTGAGCAAACTGCGCACCTTTA
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GAGTCGTATTTTAGGATTGAGCGATGATTTAGCGATGACTTTATGTGCTGAATCCATTCGCATTCAAGCCCCTATTAAAGGT
AAAGATGTCGTTGGCATTGAAATCCCTAACAGCCAAAGCCAAATTATTTACTTGAGAGAAATTTTAGAAAGCGAATTGTTTC
AAAAATCCAGCTCGCCCTTAACTCTAGCTTTAGGCAAAGACATTGTGGGTAACCCTTTCATCACGGATTTAAAAAAGCTCCC
CCATTTGCTCATCGCCG

HPC050

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AGAGCAAAAGGATAAATCTTACAAGGTTGTTGAAGAATACCCCAGCTCAAGAACCCACATCATAGTGCGCGATTTGCAAGGC
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TTGTTCAACCTAATAATGGAGGGAGTAATGAAAGCTCAGGCTTTGGCTTGGGGAGTGCGATTTTAGGGAGCGCGGCGGGGGC
GATTTTAGGGAGTTATATTGGCAATAAGCTTTTCAATAACCCTAATTATCAGCAAAACGCCCAACGGACCTACAAATCCCCA
CAAGCTTACCAACGCTCTCAAAATTCCTTTTCTAAAAGCGCACCCAGCGCTTCAAGCATGGGAGGAGCGAGTAAGGGACAGA
GCGGGTTTTTTGGCTCTAGTAGACCTACTAGTTCGCCTGCGGTAAGCTCTGGGACAAGGGGCTTTAACTCATAA

HPC056

Figure 14

TTGTTTTTAGTCAAAMMMTAGGCGTGATAGTAGTGGTTTTAATAGGCTTTCTAGCTTGCTCGCAAGAGAGGTTTATCCAAT
TGCAAAAAAAAGCCCAAGAGCAAGAAAATGACGGCTCTAAACGCCCTAGCTATGTGGATTCGGATTATGAAGTCTTTAGCGA
AACGATTTTTTTACAAAACATGGTGTATCAGCCTATAGAAGAAAGAGATTCTTTCGCCCAACTGACTAAAGATGGAGACGAT
TCTTTTAACCCCGAAACTTCGGTGATTTTATTGAATGAGCCAAGCGATAACGATACAAAAAACCCGCCCTTATACCCAAATG
AGTCTAATACTAACACTGCCAATAACGATACAAAAAACCCGTTCCTTTACAAACCGAAAAGAAAAACAAAAAATCCAAAACT
CATTGAATATTCCCAACAAAATTTCTACCCCCTAAAGGATGGGGATATTATCATGAGTAAAGAAGGGGATCAATGGTTGGTA
GAAATCAAATCCAAAGCCTTGAAGCGTTTTTTAAAAGATCAAAACGATAAAGATCGCCAGATCCAAACTTTTACTTTTAATG
ACACTAAAACGCAAATTGCGCAATTTAAGGGCAAAATTTCTTCGTATGTTTATACCACCAATAACAGCGATTTGAGTTTAAG
GCCTTTTTATGAATCGTTTTTGTTAGAAAAAAAGAGCGATGATCTTTATATGATAGGGGATAAGGCTTTAGACGCCATTGAG
ATTTCAAAGTGTCAAATGGTGTTAAAAAAGCATTCAACCGATAAATTAGACAGCCAGCATAAAGCCATCAGTATTGATTTGG
ACTTTAAAAAAGAGCGCTTTAAGAGCGATACGGAACTTTTTTTAGAATGCCAAAGTTAG

HPC059
ATGAATTTTTTTAAAATCCTTTTAATGGAATTAAGGGCTATTGTTTCTCATATTGGCGTTTTATTAATCCTTATAGGCGCTC
CTTTAATCTATGGCTTGTTATACCCTTTGCCTTATTTAAAAGACATCGTAACGCAGCAAAAAATCGCCCTTGTAGATGAAGA
CAATTCCTTCCTTTCTAGGCAATTAGCCTTCATGGCGCAAAGCTCCAACGAGTTAGAAATCGCTTTTTTTAGCCCCTCTATG
CTGGAAGCCAAAAAGCTTTTAAAAGAAGAAAAAATTTATGGGATCTTGCATATCCCTTCGTATTTTGAAGCCAATATCCATA
AGCAGGTGCCTGTAACGATAGATTTTTATGCGAATTCCAATTACTTTTTGATTTATGGCACCTTAGCGAATGCGGTGGTGGA
GAGCATCAACGCTTTAAATGATGAGATAAGATTCAAACGCAACGCCCAAATAGAAGAAGCTGAATTAGGGACAGACGGGATT
AAAATCAGGCCTATCGCTTTGTATAACCCTAGTGAGGGGTATTTGAATTACGCGCTCTCTAGCGTGTTTATTTTCATCTTAC
ACCAGGTGATGCTCATTGCAAGCAGCATGTTTACTAGCTCTAGGCGTTTGGAATTAGCCCTTTTAGATAAAAAGCAAATCGC
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TTTTATGGGATCGAACGGCATGCGAGTGCTTTAATGGTGTTTTTGAATAGCTCCATATTCATGCTTGCAACCTTGAGTTTGG
GGTCGTTTTTAGGCGCATGGATCAAAAATGAAGCCCACACCACTCAAATCGTTTTGATTTCTTCTTTGCCCTTGATTTTTAT
GATGGGTTTTGTGTGGCCTTTTGAATCCTTGCCCTCTTATTTGCAGGTTTTCGTTCAAATAGTGCCTGCTTATCATGGGATC
AGTTTGTTAGGGCGATTGAATCAAATGCATGCGGAATTTATAGATGTTTCTGTCCATTTTTATGCGCTTATTGCGATTTTTA
TTGCGAGTTTTATAGGGAGTGTCTTTAAACTCAGCTCTTTAAAGAAAGCTTGTGAAAACGCTTAA

HPC063
GTGCGTTTGTTTAGATTTGTGGGGTGGTATTATTTCAAATACTTTTTAATCGTGCTTTTGGCTTTGGAATTGTTTTTTGTAG
GCATTGACAGCTTGAAATACGCCGATAAAATGCCTGATTCTGCGAACATGATCATTTTATTTTTCACCTATGATATTTTATT
CGCCCTCAATTACACCTTGCCCATTTCCTTGCTTTTGGCGATGGTTTTATTTTACATCACCTTCATTAAATCCAACCAATAC
ACCGCCCTGCTCTCCATTGGCTTTTCCAAATGCCAGATTTTAAGCCCTATTTTTTTGATTAGCTTATTTTTCACGGCTGTTT
ATGTGGGGTTGAACGCGACTCCTTTTGTGTATATGGAAGAAAAAACGCAAAATTTAATTTATAAAGACAATTCTTTGAGCGT
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TCTTGCATGACACTACTATCTATGAGATGCCCTTAAATTTTGAACTGGGTGCAAACGCTTTAAACACCACGCGTTTAAAAAC
CTTTAAAACGCTCAAAAATTTCCGCCCTAAAGTTTTAGACACCATTTATCAAAACAAGCCTGCGGTTTCTATCACAGACGCT
CTTTTATCCTTGCATGCTTTAGTGCGCCAAAACGCGGACACGAAAAAAGTGCGCTCGTTTTTGTATGTGTTTGCGATTTTGC
CCTTTTTTGTGCCGTTTTTAAGCGTTTTAATCGCTTATTTTTCGCCCAGTCTCGCCCGCTATGAAAACCTGGCTCTTTTAGG
GCTAAAGTTTATCATTATCACGCTCGTTGTTTGGGGGCTATTCTTTGCTTTAGGGAAGTTCAGCATTTCAGGGATACTCATT
CCTGAAATAGGCGTTCTATCGCCCTTTTTCGTATTCTTAGCCCTCAGTCTTTGGTATTTTAAAAAGCTTAATAAGAGGTTGT
AG

HPC068
ATGAAAAAAACAACCCTCTTTGTATTGGGCTTATTATTCAATAGCTCTTTAAGCGCTGTTGATGGAGTTCCTAAAACCGAGC
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TAGGGTGTTATCCAACCATGAAGGCTTGCATGCGCAAGAATACGCCATTAAAAGAGCGAGTAAAATGAAATTAGCGGCTAAG
CTTTCTTTTTTGCCTCAAATTGATTTGAGCGCTTTTTATGTGTACCTCTCTAACCCTATTAAAATGGATTTTGCCAGCCAAA
AACAACCGGGCGTGCAAAAAGCCACCAACCAGATCCATCAAGGCTTGCAAAGCATTCAGCAAAATATCCCCCCTCAAGTCCT
AACCCCTCAAATCCAAGCGGGCATGCAAGGGGTGATGCAAGGGTTTGGGGCTTTGAGCAGCACTTTAGAAGCCCCCTTATTG
TTTTCTAAGCAAAATGTGGTGATTGGGGCTTTGAGCATTATTTATCCCCTTTATATGGGTGGGGCAAGATTCACGATGGTGC
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GCTTTGAAAATGCAAAAAGTAGGGCAAATCGCTAGGGTAGAAACCTTAGGCGCTCAAGTGGCTTATGATAAGGCCCATATCG
CTAGCGTTAAGGCTAAAGACGTGTTAGAAGTTTCGCAACTCTCGTTCAATTCTATTTTATCTAGCAAGGACGATTTAGCGCC
TTCAAGCAAATTAGAGATCCACACCGAGAAAAATCTGCCCGATTTGAGCTTTTTTGTTTCTTCCACGCTCAATTCCTACCCG
GCTTTAAAGACTTTAGAAAATCAGGTTCAAATTTCTAAAGAAAACACGAAACTACAGATCGCTAAATTCTTGCCCCAAGTGA
GTTTTTTTGGCTCTTATATCATGAAGCAAAACAATTCGGTGTTTGAAGACATGATCCCTAGTTGGTTTGTGGGCGTMGCTGG
GCGCATGCSTATTCTTTCTCCCACAGGGCGTATCCAAAAATACCAAGCGAGCAAATTAGCGGAGTTGCAAGCTAATAGCGAA
CAAATCCAAGCTAAAAAAAACATGGAATTGTTAGTGAATAAGACTTATAAAGAGACGCTTTCTTATTTGAAAGAATACAAAA
GCTTGCTTTCTAGCGTGGAATTAGCCAAGGAAAACTTAAAACTCCAAGAGCAGGCTTTTTTACAAGGCTTAAGCACGAACGC
TCAAGTCATTGATGCGAGGAACACGCTTTCTTCTATCATCGTGGAGCAAAAAAGCGTGGCTTATAAATACATCGTTTCATTA
GCGAATTTAATGGCGTTAAGCGATCATATTGATTTATTTTATGAATTTGTTTATTAA

HPC069
ATGGTGTTAGTTAAAATGGTGTTAGGGTTTTTGATCCTTTTAAGCCCTTTGTACGCTACTGGATTGGATATTVMACAAACGG
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ACGCTCCAAAAGCCTTGAAATCTCCAAACGATTAGAAGAGATTCAAGCCCAACTCAAAGTGAGTAAAGAAAATAAGAAAAAA
CTCTTAAAAGAATTAGAGCAAGCCAAAGAAAAAGCTGAATTAATTATTTCTGATGCGAATAAAGAAGCTTACACGATCACGC
AAAAATACGAATTGCAAACCAAAATGGATGTGGAAAATTTGATCAAAAATTCTAAGGCGTTGATGGATTTAGAAGTTAAAAA
GATCAAAAGAGAGCTGGTTGARAGCGTTTTTRAAGATCTAAGAGAGAGCAAAARAGTCTCTTTCAATGCGCAAGATTGCGTG
AATATTTTGAVACAVAGGCTTTAA

Figur 14

HPC070

ATGCTCGCTTCCATTATTGAATTTTCCTTACGCCAGCGAATAATCGTGATTGTTGGCGCGATTCTTATTTTGTTTTTTGGGA
CTTATAGTTTTATCCACACTCCAGTAGATGCTTTCCCCGGATATTTCGCCCACTCAAGTCAAAATCATTTTAAAACTCCCCGG
TTCTAGCCCTGAAGAAATGGAAAATAACATCGTGCGCCCTTTAGAATTGGAGCTTTTAGGCTTGAAAGGGCAAAAATCTTTA
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AGATATCTTTATGTTCACTATTGATGGCAATATCACTGAGATAGAAAAACGACAGCTTTTAGACTTTGTGATCCGCCCGCAA
TTAAGAATGATTAGCGGCGTGGCGGATGTCAATTCTATTGGAGGCTTTAGCAGGGCGTTTTGTGATCGTGCCG

HPC076

ATGGCTGAAAATTCTTTCAAAAATGTTTCCACACAACCCAAACCATTTTTCTTATTACCAGTTAAAACCCTGTTTCTTTTAG
GAGGCGTTTTTAGCGCGTTTTTTATCCTTGTTGCTGGCTTGGTTTTTTTTTAATTACACTAATTCAATGGACCATGCGATTTT
TAACTTGATGCGTTCAAACTCTTCTAACCCTATTTTAGATCAAACGCTCCGACGCGTTGTTTTTTTAGGCTCTTCTCAATTC
GTGTTGCCTTTGAGCTTGTTAGTGGGGGTGTTTTTAAGCTTGTATCGTAAAAATTTAGCACTTGGGGTGTGGTTTGTGCTAA
GCGTGATCTTATTTGAAGCCCTTTTAGAATCTTTAAAACACCTTTTGGCACACTCCATTCAATGGTTTTCGCACAGCGCTAA
TTTCCCTAGCACTATCGCGCTTTCTTTGACGCATTTTTATGGGTTGCTTGTTTTATTAATACCCCATTTGATCACGCATCAA
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TTAGCAGTGTTTTAGGAGGGTTTTGTTTAGGGGCGTCAGGGGCTTGTTTTTCCATAGGGATTTATTTGAGCGTGTTTCAAAA
GATCTAA

HPC091

ATGGGTAATCATTTTTCTAAATTAGGATTTGTTTTAGCCGCATTAGGGAGCGCGATAGGTTTAGGGCATATCTGGCGTTTCC
CCTACATGACTGGGGTGAGTGGTGGGGGTGCTTTTGTTTTATTGTTTTTATTTTTATCTTTAAGCGTTGGCGCGGCGATGTT
TATCGCTGAAATGCTATTAGGGCAAAGCACGCAAAAAAATGTAATAGAAGCCTTTAAAGAGCTTGACCTTAACCCTAAAAAA
CGCTGGAAATACGCAGGGATTTTGCTTATTTCTGGGCCATTAATACTGACTTTTTACGGCACGATTTTAGGCTGGGTGCTTT
ATTATTTGGTGAGTGTTAGTTTAATTTGCCTAACAATATCCAAGAATCTGAACAAATTTTTACTCAAACTTTGCAGTCTAT
AGGGTTACAATCCATAGGGCTTTTGAGCGTTTTATTGATAACCG

HPC094

ATGAAAAAGATTATTCTTGCATGCCTTATGGCTTTTGTGGGTGCCAATTTAAGCGCAGAGCCTAAGTGGTATAGCAAGGCCT
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AAGGGATCTACTACACCAGAGTAAGGATTAATCAAAACTTGTTTTTGCAGGGTTTAAGGGATAAGTATAACGCTCTTTATGG
GCAGTTTTCCACCTTAATGCCTAAGGTTTGTAAAGGGGTTTTTTTACAGCAATCTAAAAGCATGGGGGATTTATTGGCTAAA
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ACGCTTTCAAACCTAAAGTGCAAATCACTTTTGATAACAACAGCGATACAGAGGATACAGAGATTAAAAACGCTCTCATAAG
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AGGCAATACGGGGTTATAA

HPC095

ATGGCATTAAGGGTATTGTTATTCTTTTGTTTTTTGTTTTTACAAGCAGAAGATAAAAGCCAAGAGCTATTGTCCATACAAA
AACAAATGGCTTTGGTGGATAAAAAACTCGCCAAAGACGATAACGTGTGGTTGAAAAAATTTGAAAACTATAAGATCTACAA
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AGCACCTTAGAGCACACCTTAAAGGCTTTAGAATCCCAGCAAAAAATGTTTGAAAGCTATGGGGTCAATCCTTTTAAGGATT
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GATTGCGATGAAAGATTTATTCATGAGCTTGCTCGGGTGGTTTATTATTTTGATTGGGGGGAGCGTGCATGTGGGCGATAGG
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TAACCTTTACCACTTACACGAACAACAGGAGAGCGGGCCGGATTATTTTTGTGCCTAATAATTATATTTTCACCACCATGTT
TGCTAATTACAGCCATTTTGGGATGAAAACGGTTTGGGATGGCGTGGATTTTTGCGTTACATTTGATTCTGATTTTAAAAAA
GCTTCTAAAATTGCGCTCAATATCGCTACGGAATTGTCTAAAGAATACACGGATATTACCTATAAACAGCTCAATAAAATGC
GCGACCGGTATTCTTTAAGGAGTTTGAGTGTGAAGCCTCGATGCTTTTTGATGCCTGAAAATAACGGGATAAAAATCTCGGT
GTGGTATCAAACCAATTCGTATGCGACCATGTCTTTAAGGAGCAAGATTGTGGCTGAAATCGTTGAAGCTTTTTTGAAAGAA
GAAAATATCCATATCGCTTATACGACCAGCAAGTTGCTTAAAGTGGATGCTGATTTTTTAGGCGATGGTTTTGGGAATAAAA
GGGAACAAAAATGA

HPC099

ATGCCGGAAAATTCTAAACTACAACCTGCTAAGTTAGGGAAAAATTTTGACCCTGTGGATCATTCTAACAGGAATTTTTTCT
TTTCTCTCATTCTGTCTGTATTGTTACACTGGTTGATTTATTTTTTATTTGAACACAGAGAAGATTTTTTTCCTTCAAAACC
CAAGCTTGTTAAATTAAATCCTGAAAATTTATTGGTTTTAAAAAGAGGCCATTCGCAAGATCCCAGTAAAAACACCCAGGGC
GCTCCTAAACCCACGCTGGCTGGCCCCCAAAAACCCCCCACTCCACCCACACCCCCAATTCCGCCAACCCCGCCAAAACCTA
TAGAAAAGCCTAAACCTGAGCCTAAACCTAAGCCAAAACCAGAACCCAAAAAGCCCAACCACAAACATAAGGCTCTTAAAAA
AGTGGAAAAAGTGGAAGAGAAAAAAATAGTAGAGGAGAAAAAAGAAGAGAAAAAAATCGTAGAGCAGAAAGTAGAACAAAAA
GTAGAGCAGAAAAAAATAGAAGAGAAAAAACCTGTCAAAAAAGAATTTGACCCTAACCAGCTTTCTTTCTTGCCTAAAGAAG
TTGCGCCACCCAGAAAAGAAAATAATAAAGGCTTAGATAACCAAACCAGAAGGGATATTGATGAATTGTATGGCGAAGAATT
TGGGGATTTAGGCACAGCCGAAAAAGATTTCATCAGGAATAATTTAAGGGATATTGGGCGCATCACGCAAAAATATTTAGAA

Figure 14

TACCCTCAAGTAGCGGCTTATTTAGGGCAGGACGGGACGAATGCGGTAGAGTTTTACTTGCACCCTAACGGCGATATTACCG
ATCTTAAAATCATCATTGGCTCTGAATATAAAATGCTTGATGACAACACTTTAAAGACCATTCAGATCGCTTATAAGGATTA
CCCACGCCCTAAAACTAAAACCCTCATTCGCATCAGAGTGCGTTATTACTTGGGAGGCAATTAA

HPC101

ATGAAAACAAACGGGCTTTTTAAAATGTGGGGGCTGTTTTTAGTTTTAATCGCTTTAGTCTTTAACGCATGCTCTGATAGCC
ATAAAGAAAAAAAGGACGCTTTAGAAGTCATTAAACAAAGAGGGGTTTTAAAAGTGGGGGTTTTTAGCGATAAGCCTCCTTT
TGGATCTGTGGATTCTAAAGGGAAATATCAAGGCTATGATGTGATCATCGCTAAACGCATGGCCCTTGATTTATTGGGCGAT
GAAAATAAGATTGAGTTTATTCCCGTAGAAGCTTCAGCTAGGGTGGAATTTTTAAAAGCCAATAAAGTGGATATTATCATGG
CTAATTTCACGCGCACTAAAGAAAGAGAAAAAGTCGTGGATTTCGCTAATCCGTATATGAAAGTCGCTTKGGGGGTGATTTC
TAAAGATGGGGTCATTAAAAATATAGAAGAGTTGAAGGATAAAGAGTTGATTGTGAATAAAGGCACGACAGCGGAWTTTTAT
TTCACTAAAAATTACCCCAATATCAAACTTTGAAATTTGTACAAAACACAGAGACTTTTTTAGCCCTTTAAATAATAAGG
CCACCGCTCTAGCCCATGACAACACTTTATTGCTCGCTTGGGCGAAACAACACCCTGAATTTAAATTAGGCATTACAAGCCT
TGGCGATAAAGATGTGATCGCTCCAGCGATTAAAAAAGGCAACCCTAAGCTTTTAGAATGGTTGAATAACGAGATTGATTCC
CTCATTTCTAGCGACTTTTTAAAAGAAGCTTATCAAGAAACTTTAGAGCCTGTTTATGGCGATGAAATCAAACC

HPC107

ATGAAAAACACCAATACAAAAGAGATAAAGAATACAAGAATGGAAAAAGGTTATAGTCAATACCACGCACTCAAAAAAGGGC
TTTTAAAAACCGCTTTGCTTTTTAGCCTTCCTTTAAGCATGGCGTTAGCTGAAGACGATGGCTTTTATATGGGAGTGGGCTA
TCAAATCGGCGGTGCGCAACAAAATATCAATAACAAAGGCAGCACCCTAAGGAATAATGTCATTGATGATTTCCGCCAAGTG
GGCGTGGGTATGGCAGGGGGTAATGGGCTTTTAGCCTTAGCGACAAACACGACCATGGACGCTCTTTTAGGGATAGGCAATC
AAATTTTCAATACTAATACAACTGTTGGCAACAACAACGCAGAATTAACCCAGTTTAAAAAAATACTCCCCCAAATTGAGCA
ACGCTTTGAAGCGAATAAAAACGCTTATAGCGTTCAAGCCTTGCAAGTGTATTTGAGTAATGTGCTTTATAACTTGGTTAAT
AATAGTAATAATGGCAGCAATAATGGAGTCGTTCCTGAATATGTAGGGATTATAAAAGTTCTCTATGGTTCTCAAAATGAAT
TCAGTCTCTTAGCCACGGAGAGTGTGGCGCTTCTAAACGCGCTTACAAGGGTGAATCTGGATAGCAATTCGGTGTTTTTAAA
AGGGCWATTAGCCCAAATGCAGCTTTTTAATGACACTTCTGCAGCAAAGCTAGGCCAGATCGCAGAAAGCTTGAATAAGAGC
GGTGGTGCAGGGGCCATGCTTCAAAAGGATGTGAAAACCATCTCGGATCGAATCGCTACTTACCAAGAGAATCTAAAACAGC
TAGGAGGGATGCTAAAGAATTACGATGAGCCATACCTACCCCAATTTGGGCMAGGCACAAGCTCTCAGCATGGGGTTATTAA
TGGCTTTGGCATTCAAATGGGCTATAAGCAATTTTTTGGGAACAAGAGGAATATAGGCTTACGGTATTACGCTTTCTTTGAT
TACGGCTTTACGCAATTGGGCAGTCTTAGCAGCGCTGTTAAAGCGAACATCTTTACTTATGGTGCTGGCACGGACTTTTTAT
GGAATATCTTTAGAAGGGTTTTTAGCGATCAGTCCTTGAATGTGGGGGTGTTTGGAGGCATTCAAATAGCGGGTAACACTTG
GGATAGCTCTTTAAGAGGTCAAATTGAGAATTCGTTTAAAGAATACCCCACTCCCACAAATTTCCAATTTTTATTTAATTTG
GGCTTAAGGGCTCATTTTGCCAGCACCATGCACCGCCG

HPC110

TTTACAAAGATTATGAAGAGAGTTAGAGGGCTTGTGAAAAAACACCCCAAGAAAAGCAAGGCGGCATTAGTAGTATTGACCC
ATGTTGCGTGCAAGAAAGCGAAAGAATTGGACGATAAAGTCCAGGATAAATCCAAACAAGCTGAAAAAGAAAATCAAATCAA
TTGGTGGAAATATTCAGGATTAACAATAGCGACAAGTTTATTATTAGCCGCTTGTAGTGCTGGTGATATTGATAAACAAATA
GAGTTAGAACAAGAAAAACAAAAGACAGAACAAGAACAACAGAAAACAGAACAAGAAAGACAAAAA

HPC117

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AAAGCTATCTGTTTTCCCCCTTGCCCCCAGCGCACCAACAAATCATTAAGACAGAGCCTTGCTCTTTGGAATGCTTGAAAGA
CTTGATGTTGCAAAATCAAATCTTTTCTTTTGTTTCTCAATACGATAACAACAACCAAGATGAGAGCCTTAAAACTTATTAT
CATGACATACTCAATAAACTCAACCCTGCATTCATCGCTTCTCAAACTCCAGCTAAAGACAGCTATGAGCCTAAGATTGAAT
TAGCGGTTTTACTGCCTAAAAAGGTGGTGGGGCGTTATGCCATTTCGGTGATGAACACCCTTTTAGCGTATTTGAACACCAG
AAACAACGATTTCAATATCCAAGTCTTTGACAGCGATGAAGAGAGTCCTGAAAAATTAGAGCAAACCTATAAAGAAATTGAA
AAAGAAAAATTCCCTTTTGTGATAGCCTTATTAACCAAAGAGGGCGTGGAAAATTTGCTCCAAAACACCACGATTAGCACCC
CTACTTATGTGCCTACGGTGAATAGAACGCAATTAGAAAATCAAACTGAGCGTTCTTTAAGCGAGCGCTTGTATTTTGGGGG
GATTGACTATAAAGAGCAATTAAGCATGCTCACGGCTTTCATTAGCCCTAATTCGCCCGTGATTGAATACGATGATGATGGC
CTAATAGGAGAACGCTTGAGGCAAATCACGGAGTCTTTAAGCATTGAAGTCAAACACCAAGAAAATATTTCTTACAAACAAG
CCACCAGTTTTTCTAAAAATTTTAGAAAAAACGATGCGTTTTTTAAAAATTCTATTTTGATTTTAAACACCCCTACCACTAA
AAGCGGCCTTATCCTTTCTCAAATAGGGCTTTTAGAATACAAGCCCTTTAAAATCCTTTCCACACAAATCAATTTCAACCTC
TCTTTACTCTTACTCACCCAGCCTAAAGACAGAAAGAATTTATTCATCGTCAATGCCTTGCAAAATAGCGATGAAACGCTTA
TAGAATACGCCTCCTTATTGGAGAGCGATTTAAGGCATGATTGGGTGAATTATTCCAGTGCAATTGGGCTAGAGGTGTTTTT
AAACACACTAGATCCGCATTTTAAAAAATCTTTTCAAGAAAGTTTAGAAGACAATCAAGTCCGTTACCACAATCAAATTTAT
CAGGCTTTAGGGTATTCTTTTGAGCCGATAAAAAATGAAAGCGGAACAAAAAAAGAATAA

HPC129

ATGTCAAATAGCATGTTGGATAAAAATAAAGCGATTCTTACAGGGGGTGGGGCTTTATTATTAGGGCTAATCGTGCTTTTTT
ATTTAGCTTATCGCCCTAAGGCTGAAGTGCTGCAAGGGTTTTTGGAAGCCAGAGAATACAGCGTGAGTTCCAAAGTCCCTGG
CCGCATTGAAAAGGTGTTTGTTAAAAAAGGCGATCGCATTAAAAAGGGCGATTTGGTTTTTAGCATTTCTAGCCCTGAATTA
GAAGCCAAACTCGCTCAAGCTGAAGCCGGGCATAAAGCCGCTAAAGCGCTTAGCGATGAAGTCAAAAGAGGCTCAAGAGACG
AAACGATCAATTCTGCAAGAGATGTTTGGCAAGCGGCAAAATCCCAAGCGACTCTAGCCAAAGAGACTTATAAGCGCGTTCA
AGATTTGTATGATAACGGCGTGGCGAGCTTGCAAAAGCGCGATAAAGCCTATGCAGCTTAT

HPC132

ATGAAAATTTTAAGTTTATGGTTAGGGGTGTTTTGTTTCCTTAAGGCTACGCCTTATTTATACTTGGGCGAAGAGCCTAAAT
ATAAGGAGAATTTCACGCATTTTGAATACGCTAACCCTAACGCTAGAAAGGGCGGTGTTTTGAGGAATGACGCCATAGGGAC
TTTTGATAGCCTTAACCCTTGA

HPC137

ATGAAAACTTATTTATATAACCATTTTTTATTTTTCTGCTTTATTCTGGGAGCGTTTTTATTAGGTTTGCTTAGTCCAGCTT
ATGCTTTGAGTGTTATCACCACTAAAGAAATTAACGCTAATTTGCCTAATGGAGCGATAGAAAGCAGGGTGGTGTTAGGCAA

Figur 14

GAGGGTGTTTAAAGTAGAAGCTCATGGGTTTTATTTTAGAAACAACGCAACTAACAGCATAGACATAGAAATCACCAGTCTT
TTAAGAGACAATCAATCGTTTCCTTTGACTAGCCCTGCTAAAACCAGTTTAAAAATACCTTCTAACGCCAAGATTAAAAAAT
CCACTCTCCTTGTTTTAAAGGGCGAGAATGCTGAAGAAGTGGCTAAGATTTTAGGCATTAGCAAAGAAGAATACCAAAAGCT
AGAAAACACCGCTCAAACCAACGCTACCAATGACCCTATGTATGCCAACACGCCTTTTAGTAATGGCTCTGATAGTTCCGCT
TACGATAACAATCCTAATAGCCCTAACAATAACGCTATCAATGGTAAAGATGGCGCAAATGGGAGTAATGGCTATGGGGTAA
ATGGCAACGATGGGATAAATGGGAGCAGTGGGAGTAATGGAAATAATTCAAATAATAATGCCGTGGGCAGTGGTATTGATAC
AGATGGCGTGTTGGGTGTGGATGGAGTGAATGGATCTAACTCTTCAAGCGGTGGCTCTGTAGGGGGTTATGAGAATAATTTC
ACTAATCATGGCTCTACTAGCAATAACACAGGAGGGTATGACAATTTTAATAATAATAGCTCAAGTGGTGGGGGGTTAGGGA
ATGGGGGGCTTTTCCCTATTCCTTTTGGTAATGGTGGCACAAACAATTCCAATAATCCTACTAACACCACTAGCCCAACTAA
TGGCAGTAGTTCCAATAGCGCCACTAATCCTAACTCGCAAGAAAACAATTACTCCAGCCAGTATTGTAAAGCGCCCAARTTA
AGCCCTAACAACACGATGAAACTAGATGTTATCGCTAAAGATGGCTCTTGTATTTCTATGAACGCTTTAAGAGATGACACTA
AATGTGCTTATAGATACGATTTTGAAGCCG

HPC149

TTGTCTAAAGGTTTGAGTATCGGTAATAAAATCATATTGTGGGTGGCGTTGATTGTGATCGTGTGCGTGAGCATTTTAGGGG
TGTCCTTGAACAGCAGGGTGAAAGAGATTTTAAAAGAAAGCGCTCTGCATTCTATGCAAGATAGTTTGCATTTCAAGGTTAA
GGAAGTGCAAGGGGTTCTTGAAAACACTTATACGAGCATGGGCATTGTCAAAGAAATGCTCCCTAAAGACACCAAAAGAGAA
ATCAAAATCCGCTTGTTGAAAAACTTCATTTTAGCCAATTCGCATGTCGCTGGGGCGAGCGTGTTTTTTAAAGACAGAGAAG
ATTTAGGATTAACGCTTTTAAGGGATAACGATACGATTAAAGTGATGGAAAACCCGTCATTAGGGAATAACCCTTTAGCGCA
AAAAGCGATGAAAAATAAAGAAATTTCTAAAAGCTTGCCTTATTATAGGAAAATGCCTAATGGGGCGGAAGTTTATGGGGTT
GATATTCTTTTACCTTTATTGAATGAGAACGCTCAAGAGGTTGTAGGGGCTTTGATGGTTTTTCTTTCCATTGACAGCTTCA
GCAATGAAATCACTAAAAACAGGAGCGATTTGTTTTTAATTGGTGTTAAGGGTAAAGTGCTTTTGAGCGCGAATAAGAGTTT
GCAAGACAAATCTATCGCAGAAATTTATAAGAGCGTGCCTAAAGCCACCAACGAAGTGCTGGCTATTTTAGAAAACGGCTCT
AAAGCGACTTTAGAATATTTGGATCCCTTTAGCCATAAGGAAAATTTCTTAGCCGTTGAACCCTTTAAAATGCTAGGCAAAA
CAGAAAGTAAAGACAWTCTTAATTGGATGATCGCTTTAATCATTGAAAAAGACAAGGTCTATGAGCAAGTGGGCTCGGTGCG
TTTTGTGGTGATCATAGCGAGCGCGATCATGGTGTTAGCCTTGATTATAGCGATCACTCTTTTAATGCGAGCGATTGTGAGC
AATCGTTTGGAAGCCGTTTCTAGCACCTTGTCTCATTTCTTTAAATTATTGAACAATCAAGCCCATTCTAGCGATATTAAAT
TGATTGAAGCAAAATCCAATGACGAATTAGGGCGCATGCAAACAGCGATCAATAAAAATATCTTGCAAACCCAAAAAACCAT
GCAAGAAGACAGGCAAGCCGTCCAAGACACCATTAAAGTGGTTTCAGACGTGAAAGCAGGGAATTTTGCGGTGCGCATCACA
GCTGATCCCGCAAGCCCTGATTTGAAAGAATTGAGGGACGCGCTAAATGGGATCATGGATTATTTGCAAGAAAGCGTAGGGA
CTCACATGCCAAGCATTTTCAAAATCTTTGAAAGCTATTCTGGTTTGGATTTTAGAGGCCGAATCCAAAACGCTTCGGGTAG
GGTGGAATTGGTTACTAACGCTTTAGGGCAAGAAATCCAAAAAATGCTAGAAACTTCGTCTAATTTTGCCAAAGATTTAGCG
AACGATAGCGCGAATTTAAAAGAATGCGTGCAAAATTTAGAAAAGGCTTCAAACTCCCAACACAAAAGCTTGATGGAAACTT
CTAAAACGATAGAGAATATCACCACTTCCATTCAAGGCGTGAGCTCTCAAAGTGAAGCCATGATTGAACAAGGGCAAGACAT
TAAAAGCATTGTAGAAATCATTAGAGACATCGCTGATCAAACCAATCTATTAGCCCTAAACGCCGCTATTGAAGCCGCAAGG

HPC161

GTGGCGGTGAAAAAAATCGTTGTGGGTTGGTGTGTGGCGTTGGCTTTTTTAAGCGCAAATCCAGCGCAAGCCGATAAAGCGA
TCAGTAATGCGGATTTGATTAAAGAAATAAGGGACTTAAAAAAAATCATCAGCGCGCAAAACACTGAGATCAACAATTTAAG
AAGAGTGCAAGAAGTCTTGTCTGGGCAATTAGGGGATATGCGTAAGGATATATTAAGCACTAGAGATTATTGCATTAGCTTA
AGGCCTTATATCTATAATTGGCGCTAG

HPC169

ATGGTATTTGACAGAACAATCAGCGTAAGAGAAAAAAAAGCGGCTAAAACGCTTGGGATTGTGGGGATCGTCTTTTTTATTT
TGTTTGGCATCGTAATAAGCGGGGTGGCTTTTCAAAAAGAGTGGGTGCAACAATTGGATTTATTTTTTATAGACTTGATCCA
CAACCCTGCCCCCATTCAA

HPC172

CGATATGATAAAGGGTTTGAAAAAGATAAAAAAGATCTAGAATATTATTCTAAAGCTTGCGAGTTAAACTATGGCGATGGCT
GTGCGATTTTAGGGGATATTTATCGTAATGGTGAAGGCGTAACACAAAATTTTAAAAAAGCTTTCAAATATTACTCTAAAGC
TTGCGAATTAAATAATGGTGAAGGGTGTTCCAAATTAGGAGGGGATTATTTTTTTGGTGAAAGCGTAACGCAAGATCTTAAA
AAAGCTTTTGGATATTACTCTAAAGCTTGCGAATTAAACGAAGCTCTAACATGCACGCTTGTAGGAGAGTTTTATCGTGATG
GTGAAGGCGTAACAAAGGATCTTAAAAAAGCTTTTGAATATTCTGCTAAAGCTTGTGAATTGAACGATGCTAAAGGGTGTTA
CGCTCTAGCAGCGTTTTATAATGAGGGTAAGGGCGTAGCAAAGGATGAAAAACAAACGACAGAAAACCTTGAAAAGAGTTGC
AAGCTAGGATTAAAAGAAGCATGCGATATTCTCAAAGAACAAAAACAATAA

HPC174

ATGAAAAAATTTTTTTCTCAATCTTTATTAGCTTTGATTGTGTCTATGAACGCGCTACTGGCCATGGATGGCAATGGCGTTT
TTTTAGGGGCGGGTTATTTGCAAGGGCAAGCCCAAATGCATGCGGATATTAATTCTCAAAAACAAGCCACTAACGCTACTAT
CAAAGGCTTTGATGCGCTTTTAGGGTATCAATTTTTCTTTGGGAAATACTTTGGCTGTCGTGCTTATGGGTTTTTTGACTAC
GCTCATGCCAATTCTATTAGGCTTAAAAACCCTAACTATAACAGCGAAGTGGCGCAATTGGCGGGTCAAATTCTTGGGAAAC
AAGAAATCAATCGCTTAACGAGCCTTGCTGATCCTAAAACCTTTGAGCCAAACATGCTCACTTATGGGGGGGCTATGGATTT
AATGGTTAATGTCATCAATAACGGTATCATCAGTTTGGGGGCTTTTGGTGGGGTGCAATTGGCCGGCAATTCATGGCTTATG
GCGACACCGAGCTTTGAAGGCATTTTAGTGGAGCAAGCTTTGGTGAGTAAAAAAGCCACTTCTTTCCAATTTTTATTCAATG
TGGGGGCTCGCTTAAGGATCTTAAAGCATTCCAGCATTGAAGCGGGCGTGAAATTCCCCATGCTAAAGAAAAACCCCTATAT
CACTGCAAAAAATTTGGATATAGGGTTTAGGCGCGTGTATTCGTGGTATGTGAATTATGTGTTCACTTTCTAG

HPC176

ATGTTAGGGAAAAAAAACGAGGAAGTCTTGATTGATGAAAATTTGGTTGGGGGTGTGATAGCCCTTGATAGATTGGCAAAAC
TCAATAAGGCCAATAGGACTTTCAAAAGGGCTTTTTATCTCTCTATGGTGCTCAATGTTGCCGCTGTAACGAGTATTGTGAT
GATGATGCCTTTGAAGAAAACGGATATATTTGTTTATGGCATTGATCGATACACAGGAGAATTTAAAATTGTCAAACGCTCC
GATGCTAGACAAATTGTCAATTCTGAAGCTGTTGTGGATAGTGCAACTTCAAAATTTGTCTCATTGCTGTTTGGTTATAGCA
AAAATTCTTTGAGGGATCGCAAGGATCAATTAATGCAGTATTGCGATGTGAGTTTCCAAACCCAAGCAATGAGAATGTTCAA

Figure 14

TGAAAATATCAGACAATTCGTAGATAAAGTCCGAGCAGAAGCTATCATTAGCTCTAACATACAAAGAGAAAAAGTCAAAAAT
AGTCCCTTAACGAGATTAGCATTTTTCATTACCATCAAAATCACACCG

HPC180
ATGAAAACCTTTAAAAACCTGCTCTGTTTTAGCCTGATCGCTATGAGTTGGCTCCAAGCGGACATGTTGGATAATTTCACTA
GGGCCATTAACAGCTACACCACTAAAAAGCTTAATGAAATCAAGGATCAAGTCAATAGCGCTAACCCTACTAAAAATCACAA
TACCACTTATAACGCTAATGGCATGCTCATTAACATTGATTGTAAAGTCTTAAAAAATAACTTCTATTCGGTGTGTTATTCT
AGCGAGTTAAAAAACCCTATTTATGGCGTGAGCGTGTTGTTTGGGGATTTAGTGGATAAAAATAATATTGAAAAACGCTATG
AGTTTAAAACAGACACTCGATTAGCCAAATACCAACAAGCCACGACACAAGATTACACCAGAAGCGGTTTTGATAGGGGGCA
TTTTGTGGCGAATGACGCTTCTTTTGATTTTGCGTCTAACCCTTTAAGAGAGACTTACAGAATGACTAATATCACCCCTGAA
GCCAAAAACACCAATAGGCATTCTGTTTTATTGGTAGAAAAAGAGGGCSGTAATTTGGCCAGGAAATACCATCAAGTTTTRG
TAGAAGAACTCACCATCATCAAACAGGGTTATAGGACTTTTAGCCCTAAAANTATCGCTATTCCTAGCGGCTTTTGGTACCA
CTATGATACAAGGCTAACGGACAGCTATGAAAACGCTAAAAGCGAATGCTTTTATATCCCTAATGACAACCAAAACTATCCC
TTACAAGAAATGAGAAAAGATTGTAAAGGATATGAGCGCGTTGAAAAGCAGGTGGTTTTTAAGAACAATAAAAACACTGAGT
TGAACGAATTGCCTAAGTATTTTAACAACGCTAAGAAGTATTAA

HPC187
TTGTATTTTTTATTGGCTCTTTTTTACGACTCCTTACATTGTAGGCGATATTTTGCAATTGAAATTTATCCGTCAAAAGCTC
TGCGAGAAGCCCGTTTTACTCCCACAAAAGGATTATGAAGAAGCGGGAAATTATGCCATTAGGAAAATGCAATTATCCATTA
TTTCTCAAATTTTAGACGGGATAATCTTTGCTGGTTGGGTCTTTTTTGGTTTGACGCATTTAGAAGATTTGACGCATTATTT
AAACCTTCCTGAAACGCTAGGTTACTTGGTGTTTGCCTTGTTGTTTTTAGCGATTCAAAGCGTTTTAGCTTTACCCATTAGC
TACTACACCACCATGCATTTGGATAAGGAATTTGGCTTTTCTAAGGTGAGTTTATCGTTGTTTTTCAAGGATTTTTTCAAAG
GGTTATCGCTCACTTTAAGCGTGGGGTTGTTGTTGATTTACACTCTTATTATGATCATTGAACATGTGGAGCATTGGGAGAT
TAGCTCATTTTTTGTCGTGTTTGTTTTTATGATATTAGCTAATCTTTTTTACCCTAAAATCGCTCAGCTTTTCAACCAATTC
ACCCCCTTGAATAATAGGGATTTGGAGAGTCAAATTGAGAGCATGATGGATAAGGTGGGTTTTAAATCCGAAGGCATTTTTG
TGATGGACGCTAGCAAGAGGGATGGGCGTTTGAATGCGTATTTTGGGGGCTTGGGTAAAAACAAGCGGGTGGTGTTGTTTGA
CACTTTGATTTCTAAAGTTGGGACAGAAGGGCTTTTAGCCATTTTAGGGCATGAATTAGGGCATTTTAAAAATAAGGATTTG
TTGAAAAGTTTAGGGATTATGGGAGGCTTGCTCGCTCTTGTTTTTGCTCTGATCGCTCATTTGCCACCGATCGTTTTTGAAG
GCTTTAATGTCTCACAAACGCCAGCGAGTTTGATTACGATTTTACTCTTGTTTTTGCCGGTGTTTTCCTTTTACGCCATGCC
TTTGATCGGGTTTTTTAGCCGAAAGAATGAATACAATGCGGACAAGTTTGGGGCGAGTTTAAGCTCTAAAGAGGTTTTAGCC
AAAGCG

HPC189
TTGGAATCCTATGGGTTGGCTTGCTCTGACCGCAGGATTATTGCAGGATTAGTTGGAATAGTCAGATCAATCTGGAGCTTTT
TTAGTTCAAGATATCAAAGATCCCAACAAAAAAAAGAAGTGGATAAGAATTTACATCAAATTTGTGAAAAAATTGTGCAGGA
TGTGAAAAGCCGACTTGAAAGTCGCAAAAAAGACATATGGGAAAAGATTGAAAAACTCAAAGCCAATCTTAGACCTGTTGAT
AATTACGAACGCATGAAAGGACAATTGAAAGAAGCCCATGAAAAATTAGGATACATCTCTCATAGTATCCATCTAACAATAT
CAAAACAAGGAGCATGCAATGAAGAATGA

HPC191
GATCAAAAAACGGCTCAAAAAATGCTCGCTGATTTGAGCGTGGTAGGGGCGTATCTTAAAAAACAACAAGAGAATGAAAAGG
CTCAAAGCCCTTATTACAGAAGCAACAACTATTACAACTCTTACTATAGCCCTTACTATAGCCCTTATTATGGCATGTATGG
CATGGGCATGTATGATTTTTATGACTTTTATGATGGCATGTACGGGTTCTACCCTAACATGTTGTTTATGATGCAAGTTCAA
GATTACTTGATGTTAGAAAATTACATGTATGCACTCGATCAAGAAGAGATTTTAGACCATGACGCTTCTAATAATCAACTTG
ATACGCCTACTGATGATGACAGAGACGATAAGGACGATAAATCCTTGCAGCAGGCAAATCTTATGAGCTTTTATCGTGATCC
CAAATTCAGCAAAGGCATTCAAACCAACCGCTTGAATAGCGCTTTAGTCAATTTAGACAACAGTCGCATGCTCAAAGACAAT
TCGCTTTTCCACACTAAAGCCATGCCTACTAAAAGCGTGGATGCGATAACTTCTCAAGCCAAAGAGCTTAACCATTTAGTGG
GGCAAATCAAAGAAATGAAGCAAGATGGGGCGAGTCCTAGTAAGATTGATTCAGTGGTTCATAAAGCTATGGAAGTGAGAGA
CAAATTAGACAATAATCTCAACCAATTAGACAATGACTTAAAAGATCAAAAAGGGCTTTCAAGCGAGCAACAAGCCCAAGTG
GATAAAGCCCTAGACAGCGTGCAACAATTAAGCCATAGCAGCGATGTGGTGGGGAATTATTTAGACGGGAGTTTGAAAATTG
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GGACAACACCCATGCAAATGACAGCAAAGATCAAGGGAGTAACGCACTCATAAACCCTAACAACGCCACTAACACCGATGAC
ACTCACACCGACGATACTCACACCGACACTAACACCACAAACGATACCAGCACTACTGACACCCCCACTGATGATAAAGATG
CTAGCGGCAACAATACCGGCGATATGAATAACACGGACACCGGCAATACTGATAACGGTAACACTGATGATATAAGCAACAT
GAACAACGGCAACGATGATGCGGGTAACGCTAATGACGACATGGGTAATAGCAACGACATGGGCGATGACATGAATAATGCG
AACGACATGAACGATGACATG

Figure 15

HPN165

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ATG AAA CAA TTT AAA AAG AAA CCA AAA AAG ATA AAA CGA TCG CAT CAA AAT CAA AAA ACA ATC TTA
Met Lys Gln Phe Lys Lys Lys Pro Lys Lys Ile Lys Arg Ser His Gln Asn Gln Lys Thr Ile Leu

AAG CGT CCT TTA TGG CTT ATG CCT TTA CTG ATT GGC GGG TTT GCT AGT GGG GTG TAT GCG GAT GGA
Lys Arg Pro Leu Trp Leu Met Pro Leu Leu Ile Gly Gly Phe Ala Ser Gly Val Tyr Ala Asp Gly

ACA GAC ATT TTG GGG CTT AGT TGG GGG GAA AAA AGC CAA AAG GTA TGC GTG CAT CGT CCA TGG TAT
Thr Asp Ile Leu Gly Leu Ser Trp Gly Glu Lys Ser Gln Lys Val Cys Val His Arg Pro Trp Tyr

GCT ATA TGG AGT TGC GAT AAA TGG GAG GAA AAA ACA CAA CAA TTT ACA GGA AAC CAA CTC ATC ACA
Ala Ile Trp Ser Cys Asp Lys Trp Glu Glu Lys Thr Gln Gln Phe Thr Gly Asn Gln Leu Ile Thr

AAA ACT TGG GCA GGG GGT AAT GCG GCT AAC TAC TAC CAC TCT CAA AAC AAC CAA GAC ATC ACA GCC
Lys Thr Trp Ala Gly Gly Asn Ala Ala Asn Tyr Tyr His Ser Gln Asn Asn Gln Asp Ile Thr Ala

AAT TTA AAA AAT GAT AAC GGC ACT TAT TTT TTA AGC GGT CTG TAT AAC TAC ACC GGA GGG GAA TAT
Asn Leu Lys Asn Asp Asn Gly Thr Tyr Phe Leu Ser Gly Leu Tyr Asn Tyr Thr Gly Gly Glu Tyr

AAT GGG GGG AAT TTA GAC ATT GAA TTA GGC AGT AAC GCT ACT TTT AAT CTA GGT GCG AGT AGT GGG
Asn Gly Gly Asn Leu Asp Ile Glu Leu Gly Ser Asn Ala Thr Phe Asn Leu Gly Ala Ser Ser Gly

AAT AGC TTC ACT TCT TGG TAT CCT AAT GGG CAT ACT GAT GTT ACT TTT AGC GCT GGG ACT ATC AAT
Asn Ser Phe Thr Ser Trp Tyr Pro Asn Gly His Thr Asp Val Thr Phe Ser Ala Gly Thr Ile Asn

GTG AAT AAC AGC GTA GAA GTG GGC AAT CGT GTG GGA TCG GGA GCT GGC ACG CAC ACC GGC ACA GCC
Val Asn Asn Ser Val Glu Val Gly Asn Arg Val Gly Ser Gly Ala Gly Thr His Thr Gly Thr Ala

ACT TTA AAC TTG AAC GCT AAT AAG GTT ACT ATC AAT TCC AAT ATC AGC GCG TAT AAA ACT TCG CAA
Thr Leu Asn Leu Asn Ala Asn Lys Val Thr Ile Asn Ser Asn Ile Ser Ala Tyr Lys Thr Ser Gln

GTG AAT GTA GGC AAT GCT AAC AGC GTT ATT ACC ATT AAT TCG GTT TCT TTA AAT GGG GAT ACT TGC
Val Asn Val Gly Asn Ala Asn Ser Val Ile Thr Ile Asn Ser Val Ser Leu Asn Gly Asp Thr Cys

AGT TCT TTA GCT AGG GTG GGC GTA GGG GCT AAT TGC TCC ACT TCT GGG CCT AGC TAT TCT TTT AAA
Ser Ser Leu Ala Arg Val Gly Val Gly Ala Asn Cys Ser Thr Ser Gly Pro Ser Tyr Ser Phe Lys

GGG ACG ACT AAC GCT ACT AAC ACG ACT TTT AGC AAT TCA AGC GGC AGT TTC ACT TTT GAA GAG AAC
Gly Thr Thr Asn Ala Thr Asn Thr Thr Phe Ser Asn Ser Ser Gly Ser Phe Thr Phe Glu Glu Asn

GCC ACT TTT AGC GGG GCG AAA TTA AAT GGG GGG GCA TTC ACT TTC AAT AAA AAG TTT AAC GCT ACC
Ala Thr Phe Ser Gly Ala Lys Leu Asn Gly Gly Ala Phe Thr Phe Asn Lys Lys Phe Asn Ala Thr

AAT AAT ACC GCT TTT AAT AGC GGT AGT TTT ACT TTT AAA GGC ACA AGC TCT TTT AAT GGT GCG AAT
Asn Asn Thr Ala Phe Asn Ser Gly Ser Phe Thr Phe Lys Gly Thr Ser Ser Phe Asn Gly Ala Asn

TTT AGT AAC GCT TCC TAT ACT TTT AAT AAT CAA GCC ACT TTC CAA AAC AGC TCC TTT AAT GGG GGG
Phe Ser Asn Ala Ser Tyr Thr Phe Asn Asn Gln Ala Thr Phe Gln Asn Ser Ser Phe Asn Gly Gly

ACT TTT ACT TTT AAT GAC CAG ACC AAT CAA AGC ACC CAG CAC CCC CAA ATT CAA AAC AGC TCT TTT
Thr Phe Thr Phe Asn Asp Gln Thr Asn Gln Ser Thr Gln His Pro Gln Ile Gln Asn Ser Ser Phe

AGC GGC AGT GCT ACC ACT CTT AAG GGT TTT GCG ACT TTT GAG CAA GCC TTT AAC AAT TCA AAC CAC
Ser Gly Ser Ala Thr Thr Leu Lys Gly Phe Ala Thr Phe Glu Gln Ala Phe Asn Asn Ser Asn His

CAA CTA ACG ATA CAA AAC GCT TCC TTT AAT AAC GCT ACT TTC AAC AAT ACC GGT AAA ATC ACT ATA
Gln Leu Thr Ile Gln Asn Ala Ser Phe Asn Asn Ala Thr Phe Asn Asn Thr Gly Lys Ile Thr Ile

GAA AAA GAT GCG AGC TTT AAT AAC ACT TCG TTC AAC ACT CCT GTT GAT ACA AAC AAC ATG ACT ATT
Glu Lys Asp Ala Ser Phe Asn Asn Thr Ser Phe Asn Thr Pro Val Asp Thr Asn Asn Met Thr Ile

AGT GGT GGC GTT ACT TTA AGC GGT AAA AAT GAC TTG AAA AAT GGT GCA ACC CTT GAT TTT GGG AGT
Ser Gly Gly Val Thr Leu Ser Gly Lys Asn Asp Leu Lys Asn Gly Ala Thr Leu Asp Phe Gly Ser

TCT AAA ATC ACT CTC ACT CAA GGG ACG ACT TTC AAC CTC ACA AGT TTA GGC AGT GAG AAG AGC GTA
Ser Lys Ile Thr Leu Thr Gln Gly Thr Thr Phe Asn Leu Thr Ser Leu Gly Ser Glu Lys Ser Val

ACG ATT TTA AAT TCT AGA GGT GGG ATC ACT TAC AAT CAT CTT TTA AAC CAT GCG ATC AAT AGC TTG
Thr Ile Leu Asn Ser Arg Gly Gly Ile Thr Tyr Asn His Leu Leu Asn His Ala Ile Asn Ser Leu

ACA AAC GCC CTA AAA ACG AAC GAA AGC TCT TCA AAA CCG CAA AGT TTC GCT CAA GGT TTG TGG GAT
Thr Asn Ala Leu Lys Thr Asn Glu Ser Ser Ser Lys Pro Gln Ser Phe Ala Gln Gly Leu Trp Asp

ATG ATC ACT TAC AAT GGG GTT ACC GGG CAG CTT TTG AAT GAA AAC GCT GCA ACA TCT AAA CCC ACT
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Figure 15

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Met Ile Thr Tyr Asn Gly Val Thr Gly Gln Leu Leu Asn Glu Asn Ala Ala Thr Ser Lys Pro Thr

GAC TCT TCG CCC TCT AAA TCC TCT ACA AAC TCT ACG CAA GTC TAT CAA GTG GGT TAC AAA ATA GGG
Asp Ser Ser Pro Ser Lys Ser Ser Thr Asn Ser Thr Gln Val Tyr Gln Val Gly Tyr Lys Ile Gly

GAT ACT ATC TAC AAA CTG CAA GAA ACT TTC AGC CAC AAT TCC ATT ATT ATT CAG GCT TTA GAG AGC
Asp Thr Ile Tyr Lys Leu Gln Glu Thr Phe Ser His Asn Ser Ile Ile Ile Gln Ala Leu Glu Ser

GGG ACT TAC ACG CCA CCC CCT GTC ATT AAC GGC TCC AAA TTT GAC TTA TCC GCT TCA AAT TAT ATC
Gly Thr Tyr Thr Pro Pro Pro Val Ile Asn Gly Ser Lys Phe Asp Leu Ser Ala Ser Asn Tyr Ile

AAT GCT GAC ATG CCT TGG TAT AAC CAT AAA TAT TAT ATT CCT AAA TCC CAA AAT TTT ACA GAG AGC
Asn Ala Asp Met Pro Trp Tyr Asn His Lys Tyr Tyr Ile Pro Lys Ser Gln Asn Phe Thr Glu Ser

GGG ACT TAT TAC TTG CCG AGC GTT CAA ATA TGG GGG AGC TAC ACT AAC TCG TTT AAA CAA ACC TTT
Gly Thr Tyr Tyr Leu Pro Ser Val Gln Ile Trp Gly Ser Tyr Thr Asn Ser Phe Lys Gln Thr Phe

AGC GCA AGT AAT AGC AAT CTG GTG ATT GGG TAT AAC GCA ACA TGG ACT GAT CAC AAT GTT TCT TCT
Ser Ala Ser Asn Ser Asn Leu Val Ile Gly Tyr Asn Ala Thr Trp Thr Asp His Asn Val Ser Ser

AGC GAC ACG GTG GCT TTT GGG GAC ACT TCA GGG AGC GCT CTT AAT GGG CAT TGC GGG CCT TGG CCC
Ser Asp Thr Val Ala Phe Gly Asp Thr Ser Gly Ser Ala Leu Asn Gly His Cys Gly Pro Trp Pro

TAT TAC CAA TGC ACA GGC ACG ACT AAC GGC ACT TAT AGC GCT TAT CAT GTC TAT ATC ACA GCG AAT
Tyr Tyr Gln Cys Thr Gly Thr Thr Asn Gly Thr Tyr Ser Ala Tyr His Val Tyr Ile Thr Ala Asn

CTG CGT TCT GGC AAT CGT ATA GGC ACC GGT GGG GCA GCC AAT CTA ATC TTT AAT GGG GTA GAT AGT
Leu Arg Ser Gly Asn Arg Ile Gly Thr Gly Gly Ala Ala Asn Leu Ile Phe Asn Gly Val Asp Ser

ATC AAT ATC GCT AAC GCT ACC ATC ACG CAA CAT AAC GCC GGG GCT TAT TCA AGC TCT ATG ACT TTT
Ile Asn Ile Ala Asn Ala Thr Ile Thr Gln His Asn Ala Gly Ala Tyr Ser Ser Ser Met Thr Phe

TCC ACG CAA AAC ATG GAC AAT TCG CAG AAT TTG AAT GGC CTA AAT TCT AAC GGC AAG CTT TTG GTG
Ser Thr Gln Asn Met Asp Asn Ser Gln Asn Leu Asn Gly Leu Asn Ser Asn Gly Lys Leu Leu Val

TAT GGC ACA ACT TTC ACT AAC CAA GCC AAA GAC GGG AAA TTC ATT TTC AAT GCA GGG CAA GCG ACT
Tyr Gly Thr Thr Phe Thr Asn Gln Ala Lys Asp Gly Lys Phe Ile Phe Asn Ala Gly Gln Ala Thr

TTT GAA AAC ACC AAC TTT AAT GGA GGG AGT TAC CAA TTC AGC GGC GAT AGC TTG AAT TTT TCA AAT
Phe Glu Asn Thr Asn Phe Asn Gly Gly Ser Tyr Gln Phe Ser Gly Asp Ser Leu Asn Phe Ser Asn

AAC AAC CAG TTC AAT AGC GGT TCG TTT GAG ATT GGC GCA AAA AAT ACT ATT TTT AAT AAC GCT AAT
Asn Asn Gln Phe Asn Ser Gly Ser Phe Glu Ile Gly Ala Lys Asn Thr Ile Phe Asn Asn Ala Asn

TTT AAC AAC AGC ACT TCT TTT AAT TTC AAT AAT TCT AGC GCG ACC ACT TCG TTT GTG GGG GAT TTC
Phe Asn Asn Ser Thr Ser Phe Asn Phe Asn Asn Ser Ser Ala Thr Thr Ser Phe Val Gly Asp Phe

ACT AAC GCT AAT TCA AAT TTG CAA ATC GCT GGG AAC GCT GTT TTT GGG AAC TCT ACT AAT GGC TCT
Thr Asn Ala Asn Ser Asn Leu Gln Ile Ala Gly Asn Ala Val Phe Gly Asn Ser Thr Asn Gly Ser

CAA AAT ACC GCT AAT TTT AAT AAT ACC GGC TCT GTT AAT ATT GCA GGG AAT GCA ACC TTT GAT AAC
Gln Asn Thr Ala Asn Phe Asn Asn Thr Gly Ser Val Asn Ile Ala Gly Asn Ala Thr Phe Asp Asn

GTG GTA TTT AAC AGC CCT ACG AAC ACG AGC GTG AAA GGG AAA GTT ACT CTC AAT AAC ATC ACT TTA
Val Val Phe Asn Ser Pro Thr Asn Thr Ser Val Lys Gly Lys Val Thr Leu Asn Asn Ile Thr Leu

AAA AAC TTG AAC GCT CCT TTG TCT TTT GGC GAT GGG ACG ATT GTT TTT AGC GCT CAT TCG GTG ATT
Lys Asn Leu Asn Ala Pro Leu Ser Phe Gly Asp Gly Thr Ile Val Phe Ser Ala His Ser Val Ile

AAT ATT GGT GAA GCT ATC ACA AAT GGC AAC CCT ATC ACC CTT GTA AGC TCT TCT AAA GCA ATT GAA
Asn Ile Gly Glu Ala Ile Thr Asn Gly Asn Pro Ile Thr Leu Val Ser Ser Ser Lys Ala Ile Glu

TAC AAC GAC GCT TTC AGT AAA AAT CTA TGG CAG CTC ATC AAC TAC CAA GGG CAT GGG GCT AGC AGT
Tyr Asn Asp Ala Phe Ser Lys Asn Leu Trp Gln Leu Ile Asn Tyr Gln Gly His Gly Ala Ser Ser

GAA AAG CTC GTT TCT AGT GCG GGT AAT GGC GTC TAT GAT GTG GTG TAT TCT TTC AAC AAC CAA ACC
Glu Lys Leu Val Ser Ser Ala Gly Asn Gly Val Tyr Asp Val Val Tyr Ser Phe Asn Asn Gln Thr

TAC AAT TTC CAA GAG GTT TTT TCA CCC AAC AGC ATT TCT ATC CGG CGT TTG GGC GTT GGC ATG GTG
Tyr Asn Phe Gln Glu Val Phe Ser Pro Asn Ser Ile Ser Ile Arg Arg Leu Gly Val Gly Met Val

TTT GAT TAT GTG GAT ATG GAA AAA TCG GAT CGT TTG TAT TAT CAA AAC GCT CTC GGT TTT ATG ACC
Phe Asp Tyr Val Asp Met Glu Lys Ser Asp Arg Leu Tyr Tyr Gln Asn Ala Leu Gly Phe Met Thr
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Figure 15

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TAC ATG CCT AAT AGC TAT AAC AAT AAT TTA GGG AAT TTA AAC AAC ACC ATT TAC TAT TAC GAC AAC
Tyr Met Pro Asn Ser Tyr Asn Asn Asn Leu Gly Asn Leu Asn Asn Thr Ile Tyr Tyr Tyr Asp Asn

AGC ATT GAC TTT TAT GCG AGC GGG AAA ACT CTA TTC ACT AAA GCG GAA TTT TCT CAA ACG TTC ACT
Ser Ile Asp Phe Tyr Ala Ser Gly Lys Thr Leu Phe Thr Lys Ala Glu Phe Ser Gln Thr Phe Thr

GGG CAA AAC AGC GCG ATC GTT TTT GGG GCT AAA AAT ATA TGG ACG AGC GTA AGC GAT GCG CCG CAA
Gly Gln Asn Ser Ala Ile Val Phe Gly Ala Lys Asn Ile Trp Thr Ser Val Ser Asp Ala Pro Gln

TCT AAT GTG ATC ATT CGC TTT GGG GAC AAT AAG GGA GCA GGG AGT AAT GAT GCG AGT GGG CAT TGC
Ser Asn Val Ile Ile Arg Phe Gly Asp Asn Lys Gly Ala Gly Ser Asn Asp Ala Ser Gly His Cys

TGG AAT TTG CAA TGC ATA GGC TTT ATC ACA GGG CAT TAT GAA GCG CAA AAG ATT TAC ATC ACC GGC
Trp Asn Leu Gln Cys Ile Gly Phe Ile Thr Gly His Tyr Glu Ala Gln Lys Ile Tyr Ile Thr Gly

AGT ATT GAA AGC GGG AAC CGC ATT TCT AGC GGT GGG GGC GCG AGC CTT AAT TTT AAC GGG CTT CAA
Ser Ile Glu Ser Gly Asn Arg Ile Ser Ser Gly Gly Gly Ala Ser Leu Asn Phe Asn Gly Leu Gln

GGC ATT CTT TTA ACG AAC GCG ACT TTG TAT AAC CGC GCC GCT GGC ACG CAA AGC TCT TCT ATG AAT
Gly Ile Leu Leu Thr Asn Ala Thr Leu Tyr Asn Arg Ala Ala Gly Thr Gln Ser Ser Ser Met Asn

TTT GTT TCT AAC AGC GCG AAC ATT CAG GCT CAA AAC TCC TAT TTT ATA GAC GAT ACC GCA CAA AAT
Phe Val Ser Asn Ser Ala Asn Ile Gln Ala Gln Asn Ser Tyr Phe Ile Asp Asp Thr Ala Gln Asn

AAA GGC AAC CCT AAT TTT AGT TTC AAC GCT TTG AAT CTG GAT TTT TCT AAC AGC TCT TTT AGA GGC
Lys Gly Asn Pro Asn Phe Ser Phe Asn Ala Leu Asn Leu Asp Phe Ser Asn Ser Ser Phe Arg Gly

TAT GTG GGG CAA ACG CAG TCT GTT TTT AAA TTC AAT GCC GTT AAT GCG ATC AGT TTC ACT AAC AGC
Tyr Val Gly Gln Thr Gln Ser Val Phe Lys Phe Asn Ala Val Asn Ala Ile Ser Phe Thr Asn Ser

TCT AAT TTA AGC TCT GGT TTG TAT CAA ATG CAA GCT AAA AGC GTG TTG TTT GAC AAT TCC AAT TTA
Ser Asn Leu Ser Ser Gly Leu Tyr Gln Met Gln Ala Lys Ser Val Leu Phe Asp Asn Ser Asn Leu

AGC GTT TCA GTG GGG ACA AGC AGC ATT AAA GCC AAT GCG ATC AAT CTT TCT CAA AAC GCC TCT ATC
Ser Val Ser Val Gly Thr Ser Ser Ile Lys Ala Asn Ala Ile Asn Leu Ser Gln Asn Ala Ser Ile

AAT GCG AGC AAC CAT TCA ACC TTA GAA CTT CAA GGC GAT TTG AAT TTG AAC GAC ACC AGC TCG CTC
Asn Ala Ser Asn His Ser Thr Leu Glu Leu Gln Gly Asp Leu Asn Leu Asn Asp Thr Ser Ser Leu

AAC CTC AAC CAA AGC GCC ATT AAT GTT TCT AAC AAC GCC ACG ATC AAC GAT TAT GCG AGC TTG ATT
Asn Leu Asn Gln Ser Ala Ile Asn Val Ser Asn Asn Ala Thr Ile Asn Asp Tyr Ala Ser Leu Ile

GCG AGT AAT GGC TCT CAC CTT AAT TTT AAC GGG GCG GTT AAT TTC AAT TCA GCG AAT ATT ACT ACG
Ala Ser Asn Gly Ser His Leu Asn Phe Asn Gly Ala Val Asn Phe Asn Ser Ala Asn Ile Thr Thr

AGT TTG AGT AGT TCC TCT ATC GTG TTT AAG GGG GCG GTC TCT TTA CGA GGG CAG TTT AAT TTA AGC
Ser Leu Ser Ser Ser Ser Ile Val Phe Lys Gly Ala Val Ser Leu Arg Gly Gln Phe Asn Leu Ser

AAT AAT TCT TCT TTA GAT TTT CAA GGC TCT AGC GCT ATC ACC TCT AAC ACG GCG TTT AAT TTC TAT
Asn Asn Ser Ser Leu Asp Phe Gln Gly Ser Ser Ala Ile Thr Ser Asn Thr Ala Phe Asn Phe Tyr

GAT AAC GCT TTT TCT CAA AGC CCC ATC ACT TTC CAT CAA GCC CTT GAC ATT AAA GTG CCC TTG AGT
Asp Asn Ala Phe Ser Gln Ser Pro Ile Thr Phe His Gln Ala Leu Asp Ile Lys Val Pro Leu Ser

TTG GGA GGC AAC CTC TTA AAC CCT AAC AAC AGT AGC GTG CTG AAT TTA AAA AAC AGC CAG CTT GTT
Leu Gly Gly Asn Leu Leu Asn Pro Asn Asn Ser Ser Val Leu Asn Leu Lys Asn Ser Gln Leu Val

TTT AGC GAT CAA GGG AGC TTG AAT ATC GCT AAC ATT GAT TTA CTA AGC GAT CTG AAT GGT AAT AAA
Phe Ser Asp Gln Gly Ser Leu Asn Ile Ala Asn Ile Asp Leu Leu Ser Asp Leu Asn Gly Asn Lys

AAT CGT GTG TAT AAC ATC ATT CAA GCG GAC ATG AAT GGT AAT TGG TAT GAG CGT ATC AAC TTC TTT
Asn Arg Val Tyr Asn Ile Ile Gln Ala Asp Met Asn Gly Asn Trp Tyr Glu Arg Ile Asn Phe Phe

GGC ATG CGC ATT AAT GAT GGG ATT TAT GAC GCT AAA AAC CAA ACT TAT AGT TTC ACT AAC CCT CTC
Gly Met Arg Ile Asn Asp Gly Ile Tyr Asp Ala Lys Asn Gln Thr Tyr Ser Phe Thr Asn Pro Leu

AAT AAC GCC CTA AAA ATC ACC GAG AGC TTT AAA AAT AAC CAA CTG AGC GTT ACG CTC TCT CAA ATC
Asn Asn Ala Leu Lys Ile Thr Glu Ser Phe Lys Asn Asn Gln Leu Ser Val Thr Leu Ser Gln Ile

CCG GGC ATT AAA AAC ACG CTC TAT AAC ATT GGC TCT GAA ATC TTT AAC TAC CAA AAG GTT TAT AAC
Pro Gly Ile Lys Asn Thr Leu Tyr Asn Ile Gly Ser Glu Ile Phe Asn Tyr Gln Lys Val Tyr Asn

AAC GCT AAT GGC GTG TAT TCT TAT AGC GAT GAC GCA CAA GGC GTG TTT TAT CTC ACG AGC AGC GTG
Asn Ala Asn Gly Val Tyr Ser Tyr Ser Asp Asp Ala Gln Gly Val Phe Tyr Leu Thr Ser Ser Val
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Figure 15

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AAA GGC TAT TAC AAC CCC AAC CAA TCC TAT CAA GCC AGC GGC AGC AAT AAC ACC ACG AAA AAT AAC
Lys Gly Tyr Tyr Asn Pro Asn Gln Ser Tyr Gln Ala Ser Gly Ser Asn Asn Thr Thr Lys Asn Asn

AAT CTA ACC TCT GAA TCT TCT GTC ATT TCG CAA ACC TAT AAC GCG CAA GGC AAC CCT ATC AGC GCG
Asn Leu Thr Ser Glu Ser Ser Val Ile Ser Gln Thr Tyr Asn Ala Gln Gly Asn Pro Ile Ser Ala

TTA CAC GTC TAT AAC AAG GGC TAT AAT TTC AGT AAT ATC AAA GCG TTA GGG CAA ATG GCG CTC AAA
Leu His Val Tyr Asn Lys Gly Tyr Asn Phe Ser Asn Ile Lys Ala Leu Gly Gln Met Ala Leu Lys

CTC TAC CCT GAA ATC AAA AAG ATA TTA GGG AAT GAT TTT TCG CTT TCA AGT TTG AGC AAT TTA AAA
Leu Tyr Pro Glu Ile Lys Lys Ile Leu Gly Asn Asp Phe Ser Leu Ser Ser Leu Ser Asn Leu Lys

GGC GAT GCG CTA AAC CAG CTT ACC AAG CTC ATC ACG CCT AGC GAT TGG AAA AAC ATT AAC GAG TTG
Gly Asp Ala Leu Asn Gln Leu Thr Lys Leu Ile Thr Pro Ser Asp Trp Lys Asn Ile Asn Glu Leu

ATT GAT AAC GCA AAC AAT TCG GTC GTG CAA AAT TTC AAT AAC GGC ACT TTG ATT ATA GGA GCG ACT
Ile Asp Asn Ala Asn Asn Ser Val Val Gln Asn Phe Asn Asn Gly Thr Leu Ile Ile Gly Ala Thr

AAA ATA GGG CAA ACA GAC ACC AAT AGT GCG GTG GTT TTT GGG GGC TTG GGC TAT CAA AAG CCT TGC
Lys Ile Gly Gln Thr Asp Thr Asn Ser Ala Val Val Phe Gly Gly Leu Gly Tyr Gln Lys Pro Cys

GAT TAC ACT GAT ATT GTG TGC CAA AAA TTT AGA GGC ACT TAT TTG GGG CAG CTT TTG GAG TCC ATC
Asp Tyr Thr Asp Ile Val Cys Gln Lys Phe Arg Gly Thr Tyr Leu Gly Gln Leu Leu Glu Ser Ile

TCG GCT GAT TTG GGC TAT ATT GAC ACG ACT TTT AAC GCT AAA GAA ATT TAT CTT ACC GGC ACT TTA
Ser Ala Asp Leu Gly Tyr Ile Asp Thr Thr Phe Asn Ala Lys Glu Ile Tyr Leu Thr Gly Thr Leu

GGG AGC GGG AAC GCA TGG GGG ACT GGG GGG AGT GCG AGC GTA ACT TTT AAC AGC CAA ACT TCG CTC
Gly Ser Gly Asn Ala Trp Gly Thr Gly Gly Ser Ala Ser Val Thr Phe Asn Ser Gln Thr Ser Leu

ATT CTC AAC CAA GCG AAT ATC GTA AGC TCG CAA ACC GAT GGG ATT TTT AGC ATG CTG GGT CAA GAG
Ile Leu Asn Gln Ala Asn Ile Val Ser Ser Gln Thr Asp Gly Ile Phe Ser Met Leu Gly Gln Glu

GGC ATC AAT AAG GTT TTC AAT CAA GCC GGG CTC GCT AAT ATT TTG GGC GAA GTG GCA ATG CAA TCC
Gly Ile Asn Lys Val Phe Asn Gln Ala Gly Leu Ala Asn Ile Leu Gly Glu Val Ala Met Gln Ser

ATT AAC AAA GCC GGG GGA TTA GGG AAT TTG ATA GTA AAT ACG CTA GGG AGT GAT AGC GTG ATT GGG
Ile Asn Lys Ala Gly Gly Leu Gly Asn Leu Ile Val Asn Thr Leu Gly Ser Asp Ser Val Ile Gly

GGG TAT TTA ACG CCT GAG CAA AAA AAT CAA ACC CTA AGC CAG CTT TTG GGG CAG AAT AAT TTT GAT
Gly Tyr Leu Thr Pro Glu Gln Lys Asn Gln Thr Leu Ser Gln Leu Leu Gly Gln Asn Asn Phe Asp

AAC CTC ATG AAC GAT AGC GGT TTG AAC ACG GCG ATT AAG GAT TTG ATC AGA CAA AAA TTA GGC TTT
Asn Leu Met Asn Asp Ser Gly Leu Asn Thr Ala Ile Lys Asp Leu Ile Arg Gln Lys Leu Gly Phe

TGG ACC GGG CTA GTG GGG GGA TTA GCC GGA CTG GGG GGC ATT GAT TTG CAA AAC CCT GAA AAG CTT
Trp Thr Gly Leu Val Gly Gly Leu Ala Gly Leu Gly Gly Ile Asp Leu Gln Asn Pro Glu Lys Leu

ATA GGC AGC ATG TCC ATC AAT GAT TTA TTG AGT AAA AAG GGG TTG TTC AAT CAG ATC ACC GGC TTT
Ile Gly Ser Met Ser Ile Asn Asp Leu Leu Ser Lys Lys Gly Leu Phe Asn Gln Ile Thr Gly Phe

ATT TCC GCT AAC GAT ATA GGG CAA GTC ATA AGC GTG ATG CTG CAA GAT ATT GTC AAG CCG AGC GAC
Ile Ser Ala Asn Asp Ile Gly Gln Val Ile Ser Val Met Leu Gln Asp Ile Val Lys Pro Ser Asp

GCT TTA AAA AAC GAT GTA GCC GCT TTG GGC AAG CAA ATG ATT GGC GAA TTT TTA GGC CAA GAC ACG
Ala Leu Lys Asn Asp Val Ala Ala Leu Gly Lys Gln Met Ile Gly Glu Phe Leu Gly Gln Asp Thr

CTC AAT TCT TTA GAA AGC TTG CTG CAA AAC CAG CAG ATT AAA AGC GTT TTA GAC AAA GTC TTA GCG
Leu Asn Ser Leu Glu Ser Leu Leu Gln Asn Gln Gln Ile Lys Ser Val Leu Asp Lys Val Leu Ala

GCT AAA GGA TTA GGG TCT ATT TAT GAA CAA GGT TTG GGG GAT TTG ATC CCT AAT CTT GGT AAA AAG
Ala Lys Gly Leu Gly Ser Ile Tyr Glu Gln Gly Leu Gly Asp Leu Ile Pro Asn Leu Gly Lys Lys

GGG ATT TTC GCT CCC TAT GGC TTG AGT CAA GTG TGG CAA AAA GGG GAT TTT AGT TTC AAC GCG CAA
Gly Ile Phe Ala Pro Tyr Gly Leu Ser Gln Val Trp Gln Lys Gly Asp Phe Ser Phe Asn Ala Gln

GGC AAT GTT TTT GTG CAA AAT TCC ACT TTC TCT AAC GCT AAT GGA GGC ACG CTC AGT TTT AAC GCA
Gly Asn Val Phe Val Gln Asn Ser Thr Phe Ser Asn Ala Asn Gly Gly Thr Leu Ser Phe Asn Ala

GGA AAT TCG CTC ATT TTT GCC GGA AAC AAC CAC ATC GCT TTC ACT AAC CAT TCT GGA ACG CTC AAT
Gly Asn Ser Leu Ile Phe Ala Gly Asn Asn His Ile Ala Phe Thr Asn His Ser Gly Thr Leu Asn

TTG TTG TCT AAT CAA GTT TCT AAC ATT AAC GTC ACC ATG CTT AAC GCT AGC AAC GGC CTT AAG ATT
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Figure 15

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Leu Leu Ser Asn Gln Val Ser Asn Ile Asn Val Thr Met Leu Asn Ala Ser Asn Gly Leu Lys Ile

AAC GCC ACT AAT AAC AAT GTT TCC GTG TCT CAA GGC AAT CTG TTT ATC AAC GCT AGC TGC GTG CAA
Asn Ala Thr Asn Asn Asn Val Ser Val Ser Gln Gly Asn Leu Phe Ile Asn Ala Ser Cys Val Gln

CAA AGC GAT CCA ACG ACA GCT AGC GCC ACA AAC CCT TGC ACC ACC GCT CAA AAT AAC GCT TCT TCT
Gln Ser Asp Pro Thr Thr Ala Ser Ala Thr Asn Pro Cys Thr Thr Ala Gln Asn Asn Ala Ser Ser

AGT AAT GCG TCA AAC AAC GCG CCA ATC GCC TTA AAT AAT AAC GAT GAA AGC TTG GTG GTT ACG GCG
Ser Asn Ala Ser Asn Asn Ala Pro Ile Ala Leu Asn Asn Asn Asp Glu Ser Leu Val Val Thr Ala

AAT GGT TTC AAT TTT TCA GGC AAT ATT TAC GCT AAC GGG GTG GTT GAT TTT TCA AAA ATT AAA GGC
Asn Gly Phe Asn Phe Ser Gly Asn Ile Tyr Ala Asn Gly Val Val Asp Phe Ser Lys Ile Lys Gly

TCT GCA AAC GTT AAA AAC CTG TAT CTT TAC AAT AAC GCT CAA TTC CAA GCC AAC AAC CTC ACG ATT
Ser Ala Asn Val Lys Asn Leu Tyr Leu Tyr Asn Asn Ala Gln Phe Gln Ala Asn Asn Leu Thr Ile

TCC AAC CAA GCG GTA TTA GAG AAA AAC GCT AGC TTT GTA ACG AAT AAC TTA AAC ATT CAA GGA GCG
Ser Asn Gln Ala Val Leu Glu Lys Asn Ala Ser Phe Val Thr Asn Asn Leu Asn Ile Gln Gly Ala

TTT AAC AAC AAC GCC ACG CAA AAA ATA GAG GTG CTT CAA AAT TTA GTG ATC GCT TCA AAC GCT TCT
Phe Asn Asn Asn Ala Thr Gln Lys Ile Glu Val Leu Gln Asn Leu Val Ile Ala Ser Asn Ala Ser

TTA AGC ACC GGG ATT TAT GGG TTA GAA GTA GGG GGG GCA TTG AAT AAT TTG GGA GCG ATC CAT TTT
Leu Ser Thr Gly Ile Tyr Gly Leu Glu Val Gly Gly Ala Leu Asn Asn Leu Gly Ala Ile His Phe

AAT TTA GAA AAT TCT CAA ACG CCT GTA AAT CCG CTC ATT CAA GTA GGG GGG ATC ATT AAT CTC AAC
Asn Leu Glu Asn Ser Gln Thr Pro Val Asn Pro Leu Ile Gln Val Gly Gly Ile Ile Asn Leu Asn

ACC ACC CAA ACG CCT TTT ATG AAT GTC AGC GTG GCT AAT GGC GGA ACT TAC ACT TTA TTA AAA AGC
Thr Thr Gln Thr Pro Phe Met Asn Val Ser Val Ala Asn Gly Gly Thr Tyr Thr Leu Leu Lys Ser

AGC CGT TAT ATT GAT TAC AAT ATC AAC CCT AAC AGC TTG CAA TCG TAT TTG AAG CTC TAT ACC TTA
Ser Arg Tyr Ile Asp Tyr Asn Ile Asn Pro Asn Ser Leu Gln Ser Tyr Leu Lys Leu Tyr Thr Leu

ATC AAT ATC AAC GGA AAC CAC ATA GAG GAA AAA AAC GGC GTA TTG ACT TAT TTG GGC CAA CGG GTT
Ile Asn Ile Asn Gly Asn His Ile Glu Glu Lys Asn Gly Val Leu Thr Tyr Leu Gly Gln Arg Val

TTA TTA CAA GAT AAG GGG TTA TTA TTG AGT GTA GCA CTA CCT AAC TCA AAC AAC GCC TCT CAA AAC
Leu Leu Gln Asp Lys Gly Leu Leu Leu Ser Val Ala Leu Pro Asn Ser Asn Asn Ala Ser Gln Asn

AAC ATT TTA AGC CTT TCT GTC CTT CAC AAC CAG ATT AAA ATG TCT TAT GGT AAT AAA GTG ATG GAC
Asn Ile Leu Ser Leu Ser Val Leu His Asn Gln Ile Lys Met Ser Tyr Gly Asn Lys Val Met Asp

TTT ACC CCT CCC ACC TTA CAG GAT TAC ATT GTG GGC ATT CAA GGA CAA AGC GCA CTC AAT CAA ATT
Phe Thr Pro Pro Thr Leu Gln Asp Tyr Ile Val Gly Ile Gln Gly Gln Ser Ala Leu Asn Gln Ile

GAA GCT GTT GGG GGG AAT AAC GCT ATC AAG TGG CTT TCA ACA TTG ATG ATG GAG ACT AAA GAA AAC
Glu Ala Val Gly Gly Asn Asn Ala Ile Lys Trp Leu Ser Thr Leu Met Met Glu Thr Lys Glu Asn

CCG CTT TTT GCG CCG ATT TAT TTA GAA AAC CAC TCT TTA AAT GAA ATC TTA GGC GTA ACA AAA GAT
Pro Leu Phe Ala Pro Ile Tyr Leu Glu Asn His Ser Leu Asn Glu Ile Leu Gly Val Thr Lys Asp

CTT CAA AAC ACC GCA AGC TTG ATT TCT AAC CCT AAT TTT AGA AAT AAC GCT ACC AGC CTT TTA GAA
Leu Gln Asn Thr Ala Ser Leu Ile Ser Asn Pro Asn Phe Arg Asn Asn Ala Thr Ser Leu Leu Glu

ATG GCG AGT TAC ACC CAA CAA ACC AGC CGT TTG ACA AAA CTC TCT GAT TTT AGG GCT AGA GAG GGA
Met Ala Ser Tyr Thr Gln Gln Thr Ser Arg Leu Thr Lys Leu Ser Asp Phe Arg Ala Arg Glu Gly

GAG TCC AAT TTT TCA GAG CGC TTG TTA GAG CTT AAA AAC AAG CGT TTT AGC GAT CCT AAC CCT AGT
Glu Ser Asn Phe Ser Glu Arg Leu Leu Glu Leu Lys Asn Lys Arg Phe Ser Asp Pro Asn Pro Ser

GAG GTT TTT GTC AAA TAC TCT CAA CTC AGC AAA CAC CCC AAT AAC CTT TGG ATT CAA GGG GTG GGA
Glu Val Phe Val Lys Tyr Ser Gln Leu Ser Lys His Pro Asn Asn Leu Trp Ile Gln Gly Val Gly

GGA GCG AGC TTT ATT TCT GGG GGC AAT GGC ACG CTT TAT GGC TTG AAT GTG GGC TAT GAC CGA TTG
Gly Ala Ser Phe Ile Ser Gly Gly Asn Gly Thr Leu Tyr Gly Leu Asn Val Gly Tyr Asp Arg Leu

GTT AAA AGC GTG ATC CTT GGG GGT TAT GTG GCT TAT GGC TAT AGC GGT TTT AAC GGG AAC ATC ATG
Val Lys Ser Val Ile Leu Gly Gly Tyr Val Ala Tyr Gly Tyr Ser Gly Phe Asn Gly Asn Ile Met

CAT TCT TTG GCT AAT AAT GTG GAT GTG GGG ATG TAT GCG AGG GCT TTT TTG AAA AGA AAC GAA TTC
His Ser Leu Ala Asn Asn Val Asp Val Gly Met Tyr Ala Arg Ala Phe Leu Lys Arg Asn Glu Phe
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Figure 15

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ACT TTG AGC GCG AAT GAA ACT TAT GGA GGC AAT GCG AGT CAT ATC AAT TCT TCT AAT TCC TTG CTC
Thr Leu Ser Ala Asn Glu Thr Tyr Gly Gly Asn Ala Ser His Ile Asn Ser Ser Asn Ser Leu Leu

TCT GTG TTG AAC CAA CGC TAC AAC TAC AAC ACC TGG ACA ACG AGC GTG AAT GGG AAT TAC GGC TAT
Ser Val Leu Asn Gln Arg Tyr Asn Tyr Asn Thr Trp Thr Thr Ser Val Asn Gly Asn Tyr Gly Tyr

GAT TTC ATG TTC AAA CAA AAA AGC GTG GTG CTA AAA CCT CAA GTG GGC TTG AGC TAT CAT TTC ATA
Asp Phe Met Phe Lys Gln Lys Ser Val Val Leu Lys Pro Gln Val Gly Leu Ser Tyr His Phe Ile

GGC TTG AGC GGG ATG AAA GGT AAA ATG CAA AAT CCA GCT TAC CAA CAA TTC GTC ATG CAT TCA AAC
Gly Leu Ser Gly Met Lys Gly Lys Met Gln Asn Pro Ala Tyr Gln Gln Phe Val Met His Ser Asn

CCT TCT AAC GAA TCG GTT TTA ACG CTC AAC ATG GGG TTA GAG AGC CGT AAA TAT TTT GGT AAA AAT
Pro Ser Asn Glu Ser Val Leu Thr Leu Asn Met Gly Leu Glu Ser Arg Lys Tyr Phe Gly Lys Asn

TCC TAT TAT TTT GTA ACG GCG AGG TTG GGT AGG GAT CTT TTG ATC AAA GCT AAA GGC GAC AAT GTG
Ser Tyr Tyr Phe Val Thr Ala Arg Leu Gly Arg Asp Leu Leu Ile Lys Ala Lys Gly Asp Asn Val

GTG CGT TTT GTG GGT GAA AAC ACT TTA TTG TAC CGC AAG GGG GAA ATT TTT AAC ACT TTT GCG AGC
Val Arg Phe Val Gly Glu Asn Thr Leu Leu Tyr Arg Lys Gly Glu Ile Phe Asn Thr Phe Ala Ser

GTG ATC ACA GGA GGC GAA ATG CAT TTG TGG CGT TTG ATG TAT GTG AAT GCG GGG GTG GGG CTT AAA
Val Ile Thr Gly Gly Glu Met His Leu Trp Arg Leu Met Tyr Val Asn Ala Gly Val Gly Leu Lys

ATG GGC TTG CAA TAC CAA GAT CTT AAT ATC ACT GGG AAT GTG GGC ATG CGA GTG GCG TTT TAG
Met Gly Leu Gln Tyr Gln Asp Leu Asn Ile Thr Gly Asn Val Gly Met Arg Val Ala Phe ---
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HPC001

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ATG AAA TTT TTA CGC TCT GTT TAT GCA TTT TGC TCC AGT TGG GTG GGG ACG ATT GTT ATT
Met Lys Phe Leu Arg Ser Val Tyr Ala Phe Cys Ser Ser Trp Val Gly Thr Ile Val Ile

GTG CTG TTG GTT ANC TTT TTT GTC GCG CAA GCC TTT ATC ATT CCC TCT CGC TCT ATG GTA
Val Leu Leu Val   ? Phe Phe Val Ala Gln Ala Phe Ile Ile Pro Ser Arg Ser Met Val

GGC ACG CTC TAT GAG GGC GAT ATG CTC TTT GTC AAA AAA TTT TCT TAC GGC ATC CCC ATT
Gly Thr Leu Tyr Glu Gly Asp Met Leu Phe Val Lys Lys Phe Ser Tyr Gly Ile Pro Ile

CCT AAA ATC CCA TGG ATT GAG CTT CCT GTT ATG CCT GAT TTT AAA AAT AAC GGG CAT TTG
Pro Lys Ile Pro Trp Ile Glu Leu Pro Val Met Pro Asp Phe Lys Asn Asn Gly His Leu

ATA GAG GGG GAT CGC CCT AAA CGC GGC GAA GTG GTG GTG TTT ATC CCT CCC CAT GAA AAA
Ile Glu Gly Asp Arg Pro Lys Arg Gly Glu Val Val Val Phe Ile Pro Pro His Glu Lys

AAA TCT TAC TAT GTC AAA AGG AAT TTT GCT ATT GGG GGC GAT GAG GTG TTA TTC ACT AGT
Lys Ser Tyr Tyr Val Lys Arg Asn Phe Ala Ile Gly Gly Asp Glu Val Leu Phe Thr Ser

GAG GGG TTT TAT TTG CAC CCT TTT GAG AGC GGC ACG GAC AAA ACT TAC ATC GCT AAA CAT
Glu Gly Phe Tyr Leu His Pro Phe Glu Ser Gly Thr Asp Lys Thr Tyr Ile Ala Lys His

TAC CCA GAT GCT ATG ACT AAA GAA TTT ATG GGT AAA ATT TTT GTT TTA AAC CCT TAT AAA
Tyr Pro Asp Ala Met Thr Lys Glu Phe Met Gly Lys Ile Phe Val Leu Asn Pro Tyr Lys

AGT AAG CAT CCG GGT ATC CAT TAC CAA AAA GAC AAT GAA ACC TTC CAT TTA ATG GAG CAG
Ser Lys His Pro Gly Ile His Tyr Gln Lys Asp Asn Glu Thr Phe His Leu Met Glu Gln

TTA GCC ACT CAA GGC GCG GAA GCT AAT ATC AGC ATG CAA CTC ATT CAA ATG GAG GGC GAA
Leu Ala Thr Gln Gly Ala Glu Ala Asn Ile Ser Met Gln Leu Ile Gln Met Glu Gly Glu

AAG GTG TTT TAT AAA AAA ATC AAT GAC GAT GAA TTT TTC ATG ATC GGC GAT AAC AGG GAT
Lys Val Phe Tyr Lys Lys Ile Asn Asp Asp Glu Phe Phe Met Ile Gly Asp Asn Arg Asp

AAT TCT AGC GAC TCG CGC TTT TGG GGG AGT GTG GCT TAT AAA AAT ATC GTG GGT TCG CCA
Asn Ser Ser Asp Ser Arg Phe Trp Gly Ser Val Ala Tyr Lys Asn Ile Val Gly Ser Pro

TGG TTT GTT TAT TTC AGT TTG AGT TTA AAA AAT AGC CTG GAA ATG GAT GCA GAA AAT AAC
Trp Phe Val Tyr Phe Ser Leu Ser Leu Lys Asn Ser Leu Glu Met Asp Ala Glu Asn Asn

CCC AAA AAA CGC TAT TTG GTG CGT TGG GAG CGC ATG TTT AAA AGC GTT GAA GGC TTA GAA
Pro Lys Lys Arg Tyr Leu Val Arg Trp Glu Arg Met Phe Lys Ser Val Glu Gly Leu Glu

AAA ATC ATT AAA AAA GAA AAA GCA ACG CAT TAA
Lys Ile Ile Lys Lys Glu Lys Ala Thr His ---
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Figure 15

HPC042

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ATG AAA GAA TTT AAG ATT CTA ATC ATC CTT ATT GTG GTG GTA GGC GTG ATT TAT TAT GGG GTT GAG
Met Lys Glu Phe Lys Ile Leu Ile Ile Leu Ile Val Val Val Gly Val Ile Tyr Tyr Gly Val Glu

CCT TAT GCG CAT TCG GTG ATG CAC CCT AAA GTC GCT CCG GCA GAT TTT GCT TTC AAG GAT TTA GAG
Pro Tyr Ala His Ser Val Met His Pro Lys Val Ala Pro Ala Asp Phe Ala Phe Lys Asp Leu Glu

CCG ATG GAT TTA AAA AAT GGC GAT GCT AAT AAG GGC AAA CAG CTT GTA GCC GAA AAT TGC ACC GCT
Pro Met Asp Leu Lys Asn Gly Asp Ala Asn Lys Gly Lys Gln Leu Val Ala Glu Asn Cys Thr Ala

TGC CAT GGC ATT AAA TCC CAA AAC ATT CCA GCC CCT ATG GAC AGC CTT AGC GCG AGC AAC TCT TTT
Cys His Gly Ile Lys Ser Gln Asn Ile Pro Ala Pro Met Asp Ser Leu Ser Ala Ser Asn Ser Phe

GGG GTC GTG CCA CCG GAT TTA AGC CAT GTG GCT GGG GTT TTG AAC GCG AAT TTC TTA GCC CAC TTC
Gly Val Val Pro Pro Asp Leu Ser His Val Ala Gly Val Leu Asn Ala Asn Phe Leu Ala His Phe

ATC AAA GAC CCC GTG AAA ACG GCG AAA TTG AGC CAT AAG TTC AAC GAT GAA AGG CCC TAT CCT ATG
Ile Lys Asp Pro Val Lys Thr Ala Lys Leu Ser His Lys Phe Asn Asp Glu Arg Pro Tyr Pro Met

CCG GCG TTT TCT CAA TTT AGC GAT CAA GAT TTG AGC GAT ATT GTG GCG TAT CTC ACT TCT ATT TTG
Pro Ala Phe Ser Gln Phe Ser Asp Gln Asp Leu Ser Asp Ile Val Ala Tyr Leu Thr Ser Ile Leu

CCT AAA AGT TTG AGC GAT AAG GAA GTG TTC GCA CAA AGC TGT CAA AGG TGC CAT AGC TTG GAT TAT
Pro Lys Ser Leu Ser Asp Lys Glu Val Phe Ala Gln Ser Cys Gln Arg Cys His Ser Leu Asp Tyr

GCT AAA GAT AAG GCC TTT AGC GAT CCT AAA GAT CTA GCC AAT TAT TTA GGC TCT CAT GCA CCT GAT
Ala Lys Asp Lys Ala Phe Ser Asp Pro Lys Asp Leu Ala Asn Tyr Leu Gly Ser His Ala Pro Asp

TTG TCC ATG ATG ATT AGA GCT AAA GGC GAA CAT GGC TTG AAT ATT TTC ATC AAC GAT CCG CAA AAG
Leu Ser Met Met Ile Arg Ala Lys Gly Glu His Gly Leu Asn Ile Phe Ile Asn Asp Pro Gln Lys

CTT
Leu
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HPC065

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ATG AAT AAA CCA TTT TTA ATC TTA CTC ATA GCC CTA ATT GTC TTT AGC GGC TGT AAC ATG AGA AAA
Met Asn Lys Pro Phe Leu Ile Leu Leu Ile Ala Leu Ile Val Phe Ser Gly Cys Asn Met Arg Lys

TAT TTC AAA CCC GCT AAA CAC CAA GTT AAA GGC GAA GCG TAT TTC CCT AAT CAT TTG CAA GAA AGT
Tyr Phe Lys Pro Ala Lys His Gln Val Lys Gly Glu Ala Tyr Phe Pro Asn His Leu Gln Glu Ser

ATC GTT TCG TCT AAT CGT TAT GGA GCC ATT TTG AAA AAT GGA GCG GTT ATA GGC GAT AAA GGT TTA
Ile Val Ser Ser Asn Arg Tyr Gly Ala Ile Leu Lys Asn Gly Ala Val Ile Gly Asp Lys Gly Leu

ACG CAG CTA AGA ATC GGT AAG AAT TTC AAT TAT GAA AGC AGT TTT TTA AAT GAG AGT CAG GGG TTT
Thr Gln Leu Arg Ile Gly Lys Asn Phe Asn Tyr Glu Ser Ser Phe Leu Asn Glu Ser Gln Gly Phe

TTC ATC CTT GCG CAA GAT TGT TTG AAC AAG ATT GAT AAA AAA ACA AGC AAA AAC AAG GTG GCT AAA
Phe Ile Leu Ala Gln Asp Cys Leu Asn Lys Ile Asp Lys Lys Thr Ser Lys Asn Lys Val Ala Lys

AGT GAG GAA ACG GAG CTG AAA TTA AAG GGC GTT GAA GCC GAA GTC CAA GAT AAA GTC TGT CAT CAA
Ser Glu Glu Thr Glu Leu Lys Leu Lys Gly Val Glu Ala Glu Val Gln Asp Lys Val Cys His Gln

GTG GAA TTG ATT AGC AAT AAC CCT AAC GCC AGC CAA CAA TCT ATC GTT ATC CCT TTG GAG ACT TTT
Val Glu Leu Ile Ser Asn Asn Pro Asn Ala Ser Gln Gln Ser Ile Val Ile Pro Leu Glu Thr Phe

GCC TTG AGC GCA AGC GTT AAA GGG AAT CTT TTA GCG GTG GTG TTA GCG GAC AAT TCA GCG AAT TTA
Ala Leu Ser Ala Ser Val Lys Gly Asn Leu Leu Ala Val Val Leu Ala Asp Asn Ser Ala Asn Leu

TAC GAC ATC ACT TCT CAA AAA TTG CTT TTT AGT GAG AAA GGT TCC CCA AGC ACC ACG ATC AAT TCT
Tyr Asp Ile Thr Ser Gln Lys Leu Leu Phe Ser Glu Lys Gly Ser Pro Ser Thr Thr Ile Asn Ser

TTA ATG GCG ATG CCT ATT TTT ATG GAT ACG GTC GTG GTG TTC CCC ATG CTA GAT GGG CGT TTG TTG
Leu Met Ala Met Pro Ile Phe Met Asp Thr Val Val Val Phe Pro Met Leu Asp Gly Arg Leu Leu

GTC GTG GAT TAT GTG CAT GGA AAC CCT ACG CCT ATT AGA AAC ATT GTT ATC AGC AGC GAT AAG TTT
Val Val Asp Tyr Val His Gly Asn Pro Thr Pro Ile Arg Asn Ile Val Ile Ser Ser Asp Lys Phe

TTT AAC AAT ATC ACT TAC CTT ATC GTA GAT GGC AAT AAC ATG ATC GCT TCT ACA GGG AAA AGA ATA
Phe Asn Asn Ile Thr Tyr Leu Ile Val Asp Gly Asn Asn Met Ile Ala Ser Thr Gly Lys Arg Ile

CTC TCA GTC GTG AGC GGT CAA GAG TTC AAC TAT GAT GGG GAT ATT ATA GAT TTG CTT TAT GAT AAG
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Figur 15

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Leu S r Val Val Ser Gly Gln Glu Phe Asn Tyr Asp Gly Asp Ile Ile Asp Leu Leu Tyr Asp Lys

GGG ACT TTA TAC GTG CTC ACG CTA GAC GGG CAG ATT TTG CAA ATG GAT AAG AGT TTG AGG GAA TTA
Gly Thr Leu Tyr Val Leu Thr Leu Asp Gly Gln Ile Leu Gln Met Asp Lys Ser Leu Arg Glu Leu

AAC AGC GTG AAA CTG CCC TTT GCT TCG CTC AAT ACC ATT GTA TTA AAC CAT AAT AAA TTG TAT TCT
Asn Ser Val Lys Leu Pro Phe Ala Ser Leu Asn Thr Ile Val Leu Asn His Asn Lys Leu Tyr Ser

TTA GAA AAG CGT GGG TAT GTG ATA GAA GTG GAT TTG AAT GAT TTT GAT TCG TAT AAT GTC TAT AAA
Leu Glu Lys Arg Gly Tyr Val Ile Glu Val Asp Leu Asn Asp Phe Asp Ser Tyr Asn Val Tyr Lys

ACG CCA ACT ATA GGC AGT TTT ARG TTT TTT TCA TCC AAT CGT TTG GAT AAA GGG GTG TTT TAT GAT
Thr Pro Thr Ile Gly Ser Phe   ? Phe Phe Ser Ser Asn Arg Leu Asp Lys Gly Val Phe Tyr Asp

AAA AAT CGG GTG TAT TAC GAT CGC TAC TAT TTA GAT TAT AAC GAT TTT AAA CCA AAA CTT TAT CCC
Lys Asn Arg Val Tyr Tyr Asp Arg Tyr Tyr Leu Asp Tyr Asn Asp Phe Lys Pro Lys Leu Tyr Pro

GTT GTG GAA AAA TCG GCA TCT AAA AAA TCT CAA AAA GGC GAA AAA GGG AAC ACT CCC ATT TAT TTG
Val Val Glu Lys Ser Ala Ser Lys Lys Ser Gln Lys Gly Glu Lys Gly Asn Thr Pro Ile Tyr Leu

CAA GAA AGG CAT AAA GCT AAA GAA AAG CCT TTA GAA GAA AAC AAA GTT AAG CCA AGA AAT AGC GGG
Gln Glu Arg His Lys Ala Lys Glu Lys Pro Leu Glu Glu Asn Lys Val Lys Pro Arg Asn Ser Gly

TTT GAA GAA GAA GAA GTT AAA ACC GGA AGC CGT GAT ATG GAG CCT ACT AAC AAT CAA AAT AAC GCT
Phe Glu Glu Glu Glu Val Lys Thr Gly Ser Arg Asp Met Glu Pro Thr Asn Asn Gln Asn Asn Ala

ATC CAA AAA GGC ATA AAA GAA AGT CAA GAA AAC AAA AAC GCT CCT GCT TCA AAA GAG GGT AAC CAA
Ile Gln Lys Gly Ile Lys Glu Ser Gln Glu Asn Lys Asn Ala Pro Ala Ser Lys Glu Gly Asn Gln

AAA GGT GCA GAA AAC GCT CCT GTT TCA AAA GAG GAT AAC GCT ATT AAA GAA GCG CCA AAA CTC AGC
Lys Gly Ala Glu Asn Ala Pro Val Ser Lys Glu Asp Asn Ala Ile Lys Glu Ala Pro Lys Leu Ser

CCT AAA GAA GAA AAA CGC CGC TTG AAA GAA GAA AAG AAA AAA GCC AAA GCC GAA CAA AGA GCG AGA
Pro Lys Glu Glu Lys Arg Arg Leu Lys Glu Glu Lys Lys Lys Ala Lys Ala Glu Gln Arg Ala Arg

GAA TTT GAA CAA AGA GCG AGA GAG CAT CAA GAA AGA GAT GAA AAA GAG CTT GAA GAA AGA AGA AAA
Glu Phe Glu Gln Arg Ala Arg Glu His Gln Glu Arg Asp Glu Lys Glu Leu Glu Glu Arg Arg Lys


GCT TTA GAA ATG AAT AAG AAG TAG
Ala Leu Glu Met Asn Lys Lys ---
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HPC066

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GAT CAC CCT ATT GCT ATG GGT TTT TGG CTT TTT AGC ACG ACT GTG GTG CTA TTT GAT ATA GTG GTG
Asp His Pro Ile Ala Met Gly Phe Trp Leu Phe Ser Thr Thr Val Val Leu Phe Asp Ile Val Val

GTT GCG GAG CGT TTT TGC ATT TAT TTA TGC CCT TAC GCT AGG GTG CAA TCG GTG TTG TAT GAC AAT
Val Ala Glu Arg Phe Cys Ile Tyr Leu Cys Pro Tyr Ala Arg Val Gln Ser Val Leu Tyr Asp Asn

GAC ACC TTA AAC CCT ATT TAT GAT GAA AAG CGC GGC GGA GTG CTT TAT AAC AAT CAG GGC CAT CTC
Asp Thr Leu Asn Pro Ile Tyr Asp Glu Lys Arg Gly Gly Val Leu Tyr Asn Asn Gln Gly His Leu

TTC CCC TTA CCC CCC AAA AAA CGC AGC CCA GAA AAC GAA TGC GTG AAT TGC TTG CAT TGC GTG CAG
Phe Pro Leu Pro Pro Lys Lys Arg Ser Pro Glu Asn Glu Cys Val Asn Cys Leu His Cys Val Gln

GTT TGC CCC ACA CAT ATT GAT ATT AGG AAA GGC TTG CAA TTA GAA TGC ATC AAT TGT TTA GAA TGC
Val Cys Pro Thr His Ile Asp Ile Arg Lys Gly Leu Gln Leu Glu Cys Ile Asn Cys Leu Glu Cys

GTG NAT GCA TGC ACC ATT ACC ATG GCT AAA TAC AAC CGC CCT TCA CTC ATC CAA TGG TCT TCA ACC
Val   ? Ala Cys Thr Ile Thr Met Ala Lys Tyr Asn Arg Pro Ser Leu Ile Gln Trp Ser Ser Thr

AAC GCC ATT AAC ACG CGC CAA AAA GTG CGC CTG GTG CGT TTA AAA ACG ATC GCT TAC ATG GGG GTT
Asn Ala Ile Asn Thr Arg Gln Lys Val Arg Leu Val Arg Leu Lys Thr Ile Ala Tyr Met Gly Val

ATC GCT GTT GTG ATC GCT CTT TTA GCC ATC ACT TCG TTT AAA AAA GAA CGC ATG CTC TTA GAC ATT
Ile Ala Val Val Ile Ala Leu Leu Ala Ile Thr Ser Phe Lys Lys Glu Arg Met Leu Leu Asp Ile

AAC CGC AAC AGC GAT CTG TAT GAA TTG CGC TCT AGT GGG TAT GTG GAT AAC GAT TAT GTG TTT TTA
Asn Arg Asn Ser Asp Leu Tyr Glu Leu Arg Ser Ser Gly Tyr Val Asp Asn Asp Tyr Val Phe Leu

TTC CAC AAC ACG GAC AAT AAA GAC CAT GAG TTT TAT TTC AAA ATT TTA GGG CAA AAA GAC ATC CAA
Phe His Asn Thr Asp Asn Lys Asp His Glu Phe Tyr Phe Lys Ile Leu Gly Gln Lys Asp Ile Gln
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Figure 15

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ATC AAA AAG CCT TTA AAT CCT ATC GCC ATT AAA GCC G
Ile Lys Lys Pro Leu Asn Pro Ile Ala Ile Lys Ala
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HPC074

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GAT CAA AAT AAC GAT TTG GCG TTT GTG GTG TGC TTG CAA ATC CCT TTG AGG GTA GCG ATT GAA ATC
Asp Gln Asn Asn Asp Leu Ala Phe Val Val Cys Leu Gln Ile Pro Leu Arg Val Ala Ile Glu Ile

AGC TCG CCT TCA AAG TAT TTC AGA ACC TTT AGC GAA GGG AGC ATG GTC ATG TAT TTT TCG CCT TCA
Ser Ser Pro Ser Lys Tyr Phe Arg Thr Phe Ser Glu Gly Ser Met Val Met Tyr Phe Ser Pro Ser

AAG TAT TTC AGA ACC TTT AGC GAA GGG AGC ATG GTC ATG TAT TTT ATG ATT TCT ATC ATG CTC ACT
Lys Tyr Phe Arg Thr Phe Ser Glu Gly Ser Met Val Met Tyr Phe Met Ile Ser Ile Met Leu Thr

TTA GTG TCG TTG CTT TTA TTT GTG AAA TGC ATT TCT AGC TTT TGG ACA GCG ATT GTC AAT TTT AGC
Leu Val Ser Leu Leu Leu Phe Val Lys Cys Ile Ser Ser Phe Trp Thr Ala Ile Val Asn Phe Ser

AGT TTT GAT ATT AAA GAA GTG TTC CAC CCC ATT GTG CTT TTA ACC CTA GCC TTA GCC ACC TTT GAT
Ser Phe Asp Ile Lys Glu Val Phe His Pro Ile Val Leu Leu Thr Leu Ala Leu Ala Thr Phe Asp

CTG GTC AAG GCG ATT TTT GAA GAG GAA GTT TTG GGT AAA AAT AGC GGG GAC AAC CAC CAT GCG ATC
Leu Val Lys Ala Ile Phe Glu Glu Glu Val Leu Gly Lys Asn Ser Gly Asp Asn His His Ala Ile

CAC CGC ACG ATG ATC AGA TTT TTA GGC TCT ATC ATT ATC GCA TTA GCC ATT GAA GCG TTA ATG TTA
His Arg Thr Met Ile Arg Phe Leu Gly Ser Ile Ile Ile Ala Leu Ala Ile Glu Ala Leu Met Leu

GTG TTT AAA TTC AGC GTG AGC GAA CCG NNN NAA ATC ACT TAT GCG GTG TAT TTG GCT
Val Phe Lys Phe Ser Val Ser Glu Pro  ?  ? Ile Thr Tyr Ala Val Tyr Leu Ala
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HPC083

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ATG CGC TCT CCA AAT TTA GAA AAA GAA GAA ACT GAA ATC ATA GAA ACA CTC CTT ATG CGT GAA AAA
Met Arg Ser Pro Asn Leu Glu Lys Glu Glu Thr Glu Ile Ile Glu Thr Leu Leu Met Arg Glu Lys

ATG CGT TTA TGC CCC TTG TAT TGG CGC ATC TTA GCG TTT TTA ACC GAT GGT TTG TTG GTG GCG TTT
Met Arg Leu Cys Pro Leu Tyr Trp Arg Ile Leu Ala Phe Leu Thr Asp Gly Leu Leu Val Ala Phe

TTA TTG AGC GAT CTT TTA GAC GCA TGC GAT TTC TTG CAT TCT TTA TAT TGG CTG ACT AAC CCC ATT
Leu Leu Ser Asp Leu Leu Asp Ala Cys Asp Phe Leu His Ser Leu Tyr Trp Leu Thr Asn Pro Ile

TAC CAC AGC GTG TTT GTT GTA ATG AGT TTT ATC GTC TTG TAT GGC GTT TAT GAA ATC TTT TTT GTG
Tyr His Ser Val Phe Val Val Met Ser Phe Ile Val Leu Tyr Gly Val Tyr Glu Ile Phe Phe Val

TGT TTG TGC AAG ATG AGT TTG GCT AAA CTG GTT TTT AGG ATT AAA ATT ATT GAT ATT TAT TTA GCA
Cys Leu Cys Lys Met Ser Leu Ala Lys Leu Val Phe Arg Ile Lys Ile Ile Asp Ile Tyr Leu Ala

GAT TGC CCC AGT AGG GCT ATT TTA TTG AAG CGT TTA GGG TTA AAG ATC GTG GTT TTT CTA TGC CCC
Asp Cys Pro Ser Arg Ala Ile Leu Leu Lys Arg Leu Gly Leu Lys Ile Val Val Phe Leu Cys Pro

TTT TTA TGG TTT GTA GTG TTT AAA AAC CCC TAT CAT AGG GCA TGG CAT GAA GAA AAA AGC AAA AGT
Phe Leu Trp Phe Val Val Phe Lys Asn Pro Tyr His Arg Ala Trp His Glu Glu Lys Ser Lys Ser

CTT TTG GTG TTG TTT TAA
Leu Leu Val Leu Phe ---
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HPC084

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ATG ATT TAT TGG TTG TAT TTG GCG GTC TTT TTT TTG TTG GGT GCA TTA GAC GCT AAA GAA ATC GCT
Met Ile Tyr Trp Leu Tyr Leu Ala Val Phe Phe Leu Leu Gly Ala Leu Asp Ala Lys Glu Ile Ala

ATG CAA CGA TTT GAC AAA CAA AAC CAT AAG ATT TTT GAA ATC CTT GCG GAT AAA GTG AGC GCT AAA
Met Gln Arg Phe Asp Lys Gln Asn His Lys Ile Phe Glu Ile Leu Ala Asp Lys Val Ser Ala Lys

GAC AAT GTG ATA ACC GCA TCA GGG AAT GCG ATC TTA TTG AAT TAT GAT GTG TAT ATT TTA GCG GAC
Asp Asn Val Ile Thr Ala Ser Gly Asn Ala Ile Leu Leu Asn Tyr Asp Val Tyr Ile Leu Ala Asp

AAG GTG CGT TAT GAC ACT AAA ACC AAA GAA GCG TTA TTA GAG GGG AAT ATC AAG GTT TAT AGG GGC
Lys Val Arg Tyr Asp Thr Lys Thr Lys Glu Ala Leu Leu Glu Gly Asn Ile Lys Val Tyr Arg Gly

GAG GGT TTG CTC GTT AAA ACC GAT TAT GTG AAA TTG AGC TTG AAT GAA AAA TAT GAA ATC ATT TTC
Glu Gly Leu Leu Val Lys Thr Asp Tyr Val Lys Leu Ser Leu Asn Glu Lys Tyr Glu Ile Ile Phe

CCC TTT TAT GTC CAA GAC AGC GTG AGC GGG ATT TGG GTG AGC GCG GAT ATT GCT AGC GGG AAG GAT
Pro Phe Tyr Val Gln Asp Ser Val Ser Gly Ile Trp Val Ser Ala Asp Ile Ala Ser Gly Lys Asp
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Figure 15

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CAA AAA TAT AAG GTT AAA AAC ATG AGC GCT TCA GGG TGC AGC ATT GAT AAC CCC ATT TGG CAT GTC
Gln Lys Tyr Lys Val Lys Asn Met Ser Ala Ser Gly Cys Ser Ile Asp Asn Pro Ile Trp His Val

AAT GCG ACT TCA GGC TCA TTC AAC ATG CAA AAA TCG CAT TTG TCT ATG TGG AAT CCT AAG ATC TAT
Asn Ala Thr Ser Gly Ser Phe Asn Met Gln Lys Ser His Leu Ser Met Trp Asn Pro Lys Ile Tyr

GTC GGT GAT ATT CCT GTA TTG TAT TTG CCC TAT ATT TTC ATG TCC ACT AGC AAT AAA AGA ACT ACC
Val Gly Asp Ile Pro Val Leu Tyr Leu Pro Tyr Ile Phe Met Ser Thr Ser Asn Lys Arg Thr Thr

GGG TTT TTA TAC CCT GAG TTT GGT ACT TCC AAC TTA GAC GGC TTT ATT TAT TTG CAA CCC TTT TAT
Gly Phe Leu Tyr Pro Glu Phe Gly Thr Ser Asn Leu Asp Gly Phe Ile Tyr Leu Gln Pro Phe Tyr

TTA GCC CCC AAA AAC TCA TGG GAT ATG ACC TTT ACC CCA CAA ATC CGC TAT AAA AGG GGT TTT GGC
Leu Ala Pro Lys Asn Ser Trp Asp Met Thr Phe Thr Pro Gln Ile Arg Tyr Lys Arg Gly Phe Gly

TTG AAT TTT GAA GCG CGC TAC ATT AAC TCT AAA GAC GAC AGG TTT TTA TTC AAT GCG CGC TAT TTT
Leu Asn Phe Glu Ala Arg Tyr Ile Asn Ser Lys Asp Asp Arg Phe Leu Phe Asn Ala Arg Tyr Phe

AGG AAT TAC ACC CAA TAT GTC AAA CGC TAC GAT TTG AGG AAT CAA AAT ATC TAT GGT TTT GAA TTT
Arg Asn Tyr Thr Gln Tyr Val Lys Arg Tyr Asp Leu Arg Asn Gln Asn Ile Tyr Gly Phe Glu Phe

TTA AGC TCT AGC AGG GAC ACT TTA CAA AAA TAC TTT CAT CTT AAG TCT AAT ATT GAT AAC GGG CAT
Leu Ser Ser Ser Arg Asp Thr Leu Gln Lys Tyr Phe His Leu Lys Ser Asn Ile Asp Asn Gly His

TAC ATT GAC TTT TTA TAC ATG AAC GAT TTG GAT TAT GTG CGT TTT GAA AAG GTT AAT AAG CGC ATC
Tyr Ile Asp Phe Leu Tyr Met Asn Asp Leu Asp Tyr Val Arg Phe Glu Lys Val Asn Lys Arg Ile

ACA GAC GCC ACG CAC ATG TCT AGG GCG AAT TAC TAT TTG CAA ACA GAA AAC AAT TAT TAC GGC TTG
Thr Asp Ala Thr His Met Ser Arg Ala Asn Tyr Tyr Leu Gln Thr Glu Asn Asn Tyr Tyr Gly Leu

AAT ATC AAG TAT TTT TTA AAC CTG AAT AAA ATC AAC AAC AAC CGC ACT TTC CAA TCT GTC CCT AAT
Asn Ile Lys Tyr Phe Leu Asn Leu Asn Lys Ile Asn Asn Asn Arg Thr Phe Gln Ser Val Pro Asn

TTG CAA TAC CAT AAA TAT TTA AAT TCT TTG TAT TTT AGA AAT TTA TTG TAT TCG GTG GAT TAT CAG
Leu Gln Tyr His Lys Tyr Leu Asn Ser Leu Tyr Phe Arg Asn Leu Leu Tyr Ser Val Asp Tyr Gln

TTT AGA AAC ACC GCA AGA GAS ATC GGC TAT GGC TAT GTG CAA AAC GCT TTG AAT GTG CCG GTG GGC
Phe Arg Asn Thr Ala Arg   ? Ile Gly Tyr Gly Tyr Val Gln Asn Ala Leu Asn Val Pro Val Gly

TTG CAA TTT TCT TTG TTT AAA AAG TAT TTG TCT TTA GGG CTT TGG AAC GAT CTC CAA CTA TCT AAT
Leu Gln Phe Ser Leu Phe Lys Lys Tyr Leu Ser Leu Gly Leu Trp Asn Asp Leu Gln Leu Ser Asn

GTG GCT TTA ATG CAA TCT AAC AAT TCC TTC GTG CCT ACG ATC CCT AAT GAA TCA AGG GAA TTT GGG
Val Ala Leu Met Gln Ser Asn Asn Ser Phe Val Pro Thr Ile Pro Asn Glu Ser Arg Glu Phe Gly

AAC TTT GTG TCT TCA AAT TTT TCC ATG TAT GTC AAT ATG GAT TTA GCC AGA GAA TAC AAC AAG CTT
Asn Phe Val Ser Ser Asn Phe Ser Met Tyr Val Asn Met Asp Leu Ala Arg Glu Tyr Asn Lys Leu

TTC CAC ACG ATC CAA TTG GAA GCG ATT TTC AAC ATC CCT TAT TAC MCC TTT AAA AAC GGC TTA TTT
Phe His Thr Ile Gln Leu Glu Ala Ile Phe Asn Ile Pro Tyr Tyr   ? Phe Lys Asn Gly Leu Phe

TCT CAA AAC ATG TAT GCT TTA AGC ACG CAA GCC TTA AAC AGC TAC ACT TCG CCT TTA TTG AGA GAT
Ser Gln Asn Met Tyr Ala Leu Ser Thr Gln Ala Leu Asn Ser Tyr Thr Ser Pro Leu Leu Arg Asp

TAT GAT TAT CAA GGG CGT TTG TAT GAC TCC GTG TGG AAT CCT AGC AGC ATT TTA CCT AGC GAT GCG
Tyr Asp Tyr Gln Gly Arg Leu Tyr Asp Ser Val Trp Asn Pro Ser Ser Ile Leu Pro Ser Asp Ala


AGC AAT AAA ACG GTG AAT TTA ACC CTA ACG CAA TAC CTT TAT GGC TTA GGA GGG CAA GAG TTG TTG
Ser Asn Lys Thr Val Asn Leu Thr Leu Thr Gln Tyr Leu Tyr Gly Leu Gly Gly Gln Glu Leu Leu

TAT TTT AAA ATA TCG CAA CTC ATC AAT CTT GAC GAT AAA GTT TCG CCC TTT AAA ATG CCC CTA GAA
Tyr Phe Lys Ile Ser Gln Leu Ile Asn Leu Asp Asp Lys Val Ser Pro Phe Lys Met Pro Leu Glu

AGC AAG ATC GGG TTT TCG CCC TTA ACG GGA TTG AAT ATC TTT GGG AAT GTC TTT TAT TCG TTT TAT
Ser Lys Ile Gly Phe Ser Pro Leu Thr Gly Leu Asn Ile Phe Gly Asn Val Phe Tyr Ser Phe Tyr

CAA AAC CGC CTA GAA GAA ATC TCT GTG AAC GCC AAT TAC CAA CGC AAG TTT TTA AGC TTT AAC CTC
Gln Asn Arg Leu Glu Glu Ile Ser Val Asn Ala Asn Tyr Gln Arg Lys Phe Leu Ser Phe Asn Leu

TCT TAT TTT TTA AGG AAC AAT TTT AGC AGT GGG ATT AAT AGC ATT GTA GAA AAT CTG CGG ATT ATT
Ser Tyr Phe Leu Arg Asn Asn Phe Ser Ser Gly Ile Asn Ser Ile Val Glu Asn Leu Arg Ile Ile
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Figure 15

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TAA
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HPC104
ATG GAT ATT TAT GCG TTA TAC ATA GCG ATA GGG CTT TTT ACT GGC ATT CTA TCA GGG ATT TTT GGC
Met Asp Ile Tyr Ala Leu Tyr Ile Ala Ile Gly Leu Phe Thr Gly Ile Leu Ser Gly Ile Phe Gly

ATT GGT GGG GGG TTG ATC ATT GTC CCT ATC ATG CTC GCA ACC GGG CAT TCT TTT GAA GAA TCC ATC
Ile Gly Gly Gly Leu Ile Ile Val Pro Ile Met Leu Ala Thr Gly His Ser Phe Glu Glu Ser Ile

GGC ATT TCC ATT TTG CAA ATG GTG CTT TCA TCG TTC GTG GGA TCT GTT TTG AAT TTC AAA AAA AAA
Gly Ile Ser Ile Leu Gln Met Val Leu Ser Ser Phe Val Gly Ser Val Leu Asn Phe Lys Lys Lys

TCG CTT GAT TTT TCT TTA GGC TTG TTG ATA GGG GCA GGG GGG CTG ATA GGG GCA AGT TTT AGC GGA
Ser Leu Asp Phe Ser Leu Gly Leu Leu Ile Gly Ala Gly Gly Leu Ile Gly Ala Ser Phe Ser Gly

TTT GTT TTA AAA ATC GTT TCC AGT AAA ATT TTA ATG GTT ATT TTC NCG CTT TTA GTC GTG TAT TCT
Phe Val Leu Lys Ile Val Ser Ser Lys Ile Leu Met Val Ile Phe   ? Leu Leu Val Val Tyr Ser

ATG ATC CAA TTT GTC TTA AAA CCC AAA AAA AAA GAT TTT ATA GCG GAT AAT AAA CGC TAC CCT TTG
Met Ile Gln Phe Val Leu Lys Pro Lys Lys Lys Asp Phe Ile Ala Asp Asn Lys Arg Tyr Pro Leu

CAA GGT TTA AAA TTA TTT TTA ATT GGC GCG CTC ACA GGG TTT TTT GCC ATC ACT TTA GGG ATT GGT
Gln Gly Leu Lys Leu Phe Leu Ile Gly Ala Leu Thr Gly Phe Phe Ala Ile Thr Leu Gly Ile Gly

GGG GGG ATG CTC ATG GTG CCT TTG ATG CAT TAT TTT TTA GGG TAT GAT TCT AAA AAA TGC GTG GCG
Gly Gly Met Leu Met Val Pro Leu Met His Tyr Phe Leu Gly Tyr Asp Ser Lys Lys Cys Val Ala

CTA GGG TTA TTT TTC ATC TTG TTT TCT TCT ATT TCA GGA GCT TTT TCT TTA ATG TAT CAC CAC ATC
Leu Gly Leu Phe Phe Ile Leu Phe Ser Ser Ile Ser Gly Ala Phe Ser Leu Met Tyr His His Ile

ATC AAT AAA GAA GTT CTC TTA GCA GGG GCG ATT GTG GGC TTA GGC TCA GTT ATG GGC GTG AGC ATT
Ile Asn Lys Glu Val Leu Leu Ala Gly Ala Ile Val Gly Leu Gly Ser Val Met Gly Val Ser Ile

GGG ATT AAA TGG ATC ATG GGG CTT TTG AAT GAA AAA ATG CAT AAA ATT TTG ATT TTA GGG GTG TAT
Gly Ile Lys Trp Ile Met Gly Leu Leu Asn Glu Lys Met His Lys Ile Leu Ile Leu Gly Val Tyr

GGT TTG TCG TTA TTG ATT ATT TTA TAC AAA CTC TTT TTT TAA
Gly Leu Ser Leu Leu Ile Ile Leu Tyr Lys Leu Phe Phe ---

HPC115
ATG AAA TGT TCG CAT TGC CAG TTG GAG TTT AAA GAA AGT GAG CTT TTT AAA GAA GTG ATC CAT CAT
Met Lys Cys Ser His Cys Gln Leu Glu Phe Lys Glu Ser Glu Leu Phe Lys Glu Val Ile His His

AAG GAA TTG TAT TTT TGC TGC ACG GGG TGT GCT AGA GTG TAT GCG TTA TTA TTG GAT TTG AAT TTA
Lys Glu Leu Tyr Phe Cys Cys Thr Gly Cys Ala Arg Val Tyr Ala Leu Leu Leu Asp Leu Asn Leu

GAG AGC TTT TAT GAC AAA TTA AAC GAT TCC ACT TTA GCC CCC GTA ACG CCC CAA GAT TCA ATG AGC
Glu Ser Phe Tyr Asp Lys Leu Asn Asp Ser Thr Leu Ala Pro Val Thr Pro Gln Asp Ser Met Ser

GCT TTG GAA TTA GAA CAA GCC CTT GAA GAA AAC AAT AAA AGC GAT TTT ATC CTT AAT CTT TTG CTA
Ala Leu Glu Leu Glu Gln Ala Leu Glu Glu Asn Asn Lys Ser Asp Phe Ile Leu Asn Leu Leu Leu

GAA AAA ACG CAT TGT AAC GCT TGC TTG TGG CTC AAT CAA AAG GTT TTA GAG CGC TTA AAG GGG GTT
Glu Lys Thr His Cys Asn Ala Cys Leu Trp Leu Asn Gln Lys Val Leu Glu Arg Leu Lys Gly Val

AAA AAA GTG AGC GTG AAT TTC ACC ACC CAC CAT TTA CAA ATC GTG TTT GAC AAG TCC TTA AAC CCT
Lys Lys Val Ser Val Asn Phe Thr Thr His His Leu Gln Ile Val Phe Asp Lys Ser Leu Asn Pro

AAA GAG ATT ATT CAA AAA ATT GAG AGT TTG GGT TAT GGG GCT AAA ATT TAT AAC GCA AAA AAT TAC
Lys Glu Ile Ile Gln Lys Ile Glu Ser Leu Gly Tyr Gly Ala Lys Ile Tyr Asn Ala Lys Asn Tyr

GCC CTA AAA GCC CAA AAA GAG CAG CGC TCC TAT TTG CTC ACT TTA AGC GTG GGG TTT TTT GCC ACC
Ala Leu Lys Ala Gln Lys Glu Gln Arg Ser Tyr Leu Leu Thr Leu Ser Val Gly Phe Phe Ala Thr

ATG AAT TTG ATG TTT ATT GCA ATT GCC AAA TAC GCA AGT TAT GGC GGT GCG AGT TAT GGC ACT GGC
Met Asn Leu Met Phe Ile Ala Ile Ala Lys Tyr Ala Ser Tyr Gly Gly Ala Ser Tyr Gly Thr Gly

ATG GAT AAG CTT ATG CAA AGG AAT TTG GAT CTC GTA TCG CTC TTT TTA AGC TTG TTG GTG TTA GTG
Met Asp Lys Leu Met Gln Arg Asn Leu Asp Leu Val Ser Leu Phe Leu Ser Leu Leu Val Leu Val

GTT GTG GGG CGT TTT TTC ATT AAG GGG GCG TTT TAT GGG ATA AAA AAT GGC GTT TTG GGC ATG GAT
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Figure 15

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Val Val Gly Arg Phe Phe Ile Lys Gly Ala Phe Tyr Gly Ile Lys Asn Gly Val Leu Gly Met Asp

TTG AGC GTG TCT TTT GGA GCG TTA TCG GCA TTT GTT TAT TCC CTT TAT GCC ATG CTG GTG TCC CAA
Leu Ser Val Ser Phe Gly Ala Leu Ser Ala Phe Val Tyr Ser Leu Tyr Ala Met Leu Val Ser Gln

GAG ACT TAT TTT GAA GCG AGC AGC ACG ATT TTA ACG CTT GTT TTT GGC TCT AAG TTT TTG GAA TTA
Glu Thr Tyr Phe Glu Ala Ser Ser Thr Ile Leu Thr Leu Val Phe Gly Ser Lys Phe Leu Glu Leu

AAA GCC AGG CTG TTT GCG AAT GAA AAA TGT CTG GCC CTA GAA TCG CAT GAA ATC CAT AGC GTG ATC
Lys Ala Arg Leu Phe Ala Asn Glu Lys Cys Leu Ala Leu Glu Ser His Glu Ile His Ser Val Ile

GTT GTA GAA AAG GAC AAG CAG ATA GAA AAA CAC CCT AAA GAT GTG GCG ATA GGC TCT GTT GTT TGG
Val Val Glu Lys Asp Lys Gln Ile Glu Lys His Pro Lys Asp Val Ala Ile Gly Ser Val Val Trp

GTG CCA AGC GGG GCT AAA ATC GCA CTA GAT GGA GTG CTT TTA AAT AAC GCG AGC GTG GAT GCG TCT
Val Pro Ser Gly Ala Lys Ile Ala Leu Asp Gly Val Leu Leu Asn Asn Ala Ser Val Asp Ala Ser

TTG ATC AGC GGG GAG TTT AAG CCT TTG GAA TTG GGG GTT AAT GAT CTA ATT TTA GGG GGT TAT GTG
Leu Ile Ser Gly Glu Phe Lys Pro Leu Glu Leu Gly Val Asn Asp Leu Ile Leu Gly Gly Tyr Val

AAT GTG GGC GTG CCT TTT AGC TAT CAA GTG AGC GCG ACT TTT CAA AAC TCA CGC CTT TCT AGT TTG
Asn Val Gly Val Pro Phe Ser Tyr Gln Val Ser Ala Thr Phe Gln Asn Ser Arg Leu Ser Ser Leu

TTA GAA ACT TTA AAA AAG AGT TTT TTA GAA AAG CCC TTA ATT GAG AGT AGC GCG AAT AAA ATT GCG
Leu Glu Thr Leu Lys Lys Ser Phe Leu Glu Lys Pro Leu Ile Glu Ser Ser Ala Asn Lys Ile Ala

GAT ATT TTT TCT AAA GCG GTG TTG TTT TTA GCC TTT GTA AGC TTT TTA TTA TGG CAA TTT GGT TTG
Asp Ile Phe Ser Lys Ala Val Leu Phe Leu Ala Phe Val Ser Phe Leu Leu Trp Gln Phe Gly Leu

GGG GGT AAT TTT GAA AAA GCC TTA ATG GTG TGT ATT AGC GTG TTA GTC ATC AGC TGC CCT TGC GCA
Gly Gly Asn Phe Glu Lys Ala Leu Met Val Cys Ile Ser Val Leu Val Ile Ser Cys Pro Cys Ala

TTC GCC TTA GCT ACG CCC ATT GCG TTA GTG ATA GGG GTG TTT AAA AAC CCT TTG ATC GTG TTT AAA
Phe Ala Leu Ala Thr Pro Ile Ala Leu Val Ile Gly Val Phe Lys Asn Pro Leu Ile Val Phe Lys

GAA GCG TTA TTT TTA GAA ACT CTG GCT AAA GTG GAA AAA ATC TTT ATA GAC AAA ACC G
Glu Ala Leu Phe Leu Glu Thr Leu Ala Lys Val Glu Lys Ile Phe Ile Asp Lys Thr

HPC120
ATG CTA CTA ACA ACA CTC AAG CTA AAA TCT ATT AAG GAA ATC AGT ATT AAA AAA TTT ATT CTA TCT
Met Leu Leu Thr Thr Leu Lys Leu Lys Ser Ile Lys Glu Ile Ser Ile Lys Lys Phe Ile Leu Ser

TCT CTT GTT TTC GCA TGT ATC AAT ACC AGC GTT GAA GCT TTA GAA AAT GAC GGC TCT AAA CCA AAC
Ser Leu Val Phe Ala Cys Ile Asn Thr Ser Val Glu Ala Leu Glu Asn Asp Gly Ser Lys Pro Asn

GAT TTG ACC TCT CCA AAA GAA GTC TCT CAA GAA GCT CAA AGA AAT GAG ACT CAA AGA AAT GAA GCT
Asp Leu Thr Ser Pro Lys Glu Val Ser Gln Glu Ala Gln Arg Asn Glu Thr Gln Arg Asn Glu Ala

CAA AGA AAT GAA GCT CAA AAC GAA ACT TCT CAA TCC AAT CAA ACG CCT AAA GAA ATG AAA GTC AAA
Gln Arg Asn Glu Ala Gln Asn Glu Thr Ser Gln Ser Asn Gln Thr Pro Lys Glu Met Lys Val Lys

TCC ATT TCG TAT ATC GGG CTT TCT TAC ATG TCT GAC ATG CTT GCT AAT GAG ATT GTA AAG ATT CGT
Ser Ile Ser Tyr Ile Gly Leu Ser Tyr Met Ser Asp Met Leu Ala Asn Glu Ile Val Lys Ile Arg

GTG GGC GAT ATT GTG GAT TCT AAA AAA ATA GAC ACC GCT GTT TTG GCT TTG TTC AAT CAA GGG TAT
Val Gly Asp Ile Val Asp Ser Lys Lys Ile Asp Thr Ala Val Leu Ala Leu Phe Asn Gln Gly Tyr

TTT AAA GAC GTT TAT GCC ACT TTT GAA GGC GGC ATA TTA GAG TTT CAT TTT GAT GAA AAA GCC AGA
Phe Lys Asp Val Tyr Ala Thr Phe Glu Gly Gly Ile Leu Glu Phe His Phe Asp Glu Lys Ala Arg

ATT GCC GGG GTA GAA ATC AAG GGT TAT GGG ACT GAA AAG GAA AAA GGC GAC TTA AAA TCC CAA ATG
Ile Ala Gly Val Glu Ile Lys Gly Tyr Gly Thr Glu Lys Glu Lys Gly Asp Leu Lys Ser Gln Met

GGG ATC AAA AAG GGC GAC ACC TTT GAT GAG CAA AAA TTA GAG CAT GCT AAA ACG GCT TTA AAA ACA
Gly Ile Lys Lys Gly Asp Thr Phe Asp Glu Gln Lys Leu Glu His Ala Lys Thr Ala Leu Lys Thr

GCT TTA GAG GGG CAG GGC TAT TAT GGG AGC GTG GTG GAG GTG CGC ACA GAA AAG GTC AGT GAG GGC
Ala Leu Glu Gly Gln Gly Tyr Tyr Gly Ser Val Val Glu Val Arg Thr Glu Lys Val Ser Glu Gly

GCG TTA TTA ATT GTG TTT GAT GTG AAT AGG GGG GAT AGT ATT TAT ATC AAA CAA TCC ATT TAT GAG
Ala Leu Leu Ile Val Phe Asp Val Asn Arg Gly Asp Ser Ile Tyr Ile Lys Gln Ser Ile Tyr Glu

GGG AGT GCG AAA TTA AAA CGC CGC ATG ATT GAA TCT TTG AGT GCG AAC AAG CAA AGA GAT TTC ATG
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Figure 15

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Gly Ser Ala Lys Leu Lys Arg Arg Met Ile Glu Ser Leu Ser Ala Asn Lys Gln Arg Asp Phe Met

GGC TGG ATG TGG GGC TTG AAT GAC GGG AAA TTG CGT TTA GAT CAA TTA GAA TAC GAT TCT TTG CGT
Gly Trp Met Trp Gly Leu Asn Asp Gly Lys Leu Arg Leu Asp Gln Leu Glu Tyr Asp Ser Leu Arg

ATC CAA GAT GTG TAT ATG CGT AGG GGT TAC TTA GAC GCT CAT ATT TCT TCG CCT TTT TTG AAA ACG
Ile Gln Asp Val Tyr Met Arg Arg Gly Tyr Leu Asp Ala His Ile Ser Ser Pro Phe Leu Lys Thr

GAT TTT TCT ACC CAT GAC GCT AAG CTC CAT TAT AAA GTC AAA GAG GGG ATC CAA TAC AGG ATT TCA
Asp Phe Ser Thr His Asp Ala Lys Leu His Tyr Lys Val Lys Glu Gly Ile Gln Tyr Arg Ile Ser

GAC ATT TTA ATA GAG ATT GAC AAC CCG
Asp Ile Leu Ile Glu Ile Asp Asn Pro
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HPC 130

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ATG AAA AGA TTT GTT TTG TTT TTA TCA CTC ATG GGT GTT TGC GTT TGC GTT CAA GCT TAC GCC GAG
Met Lys Arg Phe Val Leu Phe Leu Ser Leu Met Gly Val Cys Val Cys Val Gln Ala Tyr Ala Glu

CAA GAT TAC TTT TTT AGG GAT TTT AAA TCT AAA GAC TTG CCC CAA AAA CTC CAT CTT GAT AAA AAG
Gln Asp Tyr Phe Phe Arg Asp Phe Lys Ser Lys Asp Leu Pro Gln Lys Leu His Leu Asp Lys Lys

CTT TCC CAA ACA ATA CAG CCA TGC GCG CAA CTT AAC GCA TCA AAA CAC TAC ACT GCT ACC G
Leu Ser Gln Thr Ile Gln Pro Cys Ala Gln Leu Asn Ala Ser Lys His Tyr Thr Ala Thr
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HPC133

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ATG CAA AGT CTT AGT TGG CTG AAT TTA GCG TTC CGT TGG CTC TTT ATA ACA GGG CTT GGC TAT TAT
Met Gln Ser Leu Ser Trp Leu Asn Leu Ala Phe Arg Trp Leu Phe Ile Thr Gly Leu Gly Tyr Tyr

ATA ATG ACT TTA TTG CAA TGG TAT CAT TAC AGC GTG TTC AGG ATT TTA ACT AAG CAT CAT AAA ATG
Ile Met Thr Leu Leu Gln Trp Tyr His Tyr Ser Val Phe Arg Ile Leu Thr Lys His His Lys Met

CGT TGG CAT GGG ATT TAT TTT TTA TTG CCT TTA GGG GTG TTT ATC CTA TCG TAT GCT TTC AAA ATG
Arg Trp His Gly Ile Tyr Phe Leu Leu Pro Leu Gly Val Phe Ile Leu Ser Tyr Ala Phe Lys Met

CCG TTT GTT TTT GAT TTC TTT TGC GGC GTT ATT CAA ATG CCC ATG CTT ATT ATC TGG GCC AAA CGC
Pro Phe Val Phe Asp Phe Phe Cys Gly Val Ile Gln Met Pro Met Leu Ile Ile Trp Ala Lys Arg

AAC GAC AAA CCT TTA GTT TTC ACG CCA AGG GTG AAG CGC TTT TTT ATT TTC TTG TTA CTC TTT TTA
Asn Asp Lys Pro Leu Val Phe Thr Pro Arg Val Lys Arg Phe Phe Ile Phe Leu Leu Leu Phe Leu

ATC TTG CAT GAA ATC TTA AAT ACA GAA TTA GTC CCT TTG AAT GGG ATT TCG CTC GCG CTT GGC TAT
Ile Leu His Glu Ile Leu Asn Thr Glu Leu Val Pro Leu Asn Gly Ile Ser Leu Ala Leu Gly Tyr

TTG TGT TTA TTT ATA TTC GTT TTA AGC GCT TCT TTA ATC TTT GAA AAA GCC TTA TCC AAG CAG TAT
Leu Cys Leu Phe Ile Phe Val Leu Ser Ala Ser Leu Ile Phe Glu Lys Ala Leu Ser Lys Gln Tyr

TTA CAA ACC GCT AAA GAT AAA ATC GCC TCT TTA AAG AAT TTA AAA GTC ATC GCC ATT ACC GGA AGC
Leu Gln Thr Ala Lys Asp Lys Ile Ala Ser Leu Lys Asn Leu Lys Val Ile Ala Ile Thr Gly Ser

TT
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HPC143

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ATG AAA AAA CTT CTT TAT ACC ATA CTC GCA CTT CTT TTA ATC GGT CTT TTA ACA ACC TAT ATC ATC
Met Lys Lys Leu Leu Tyr Thr Ile Leu Ala Leu Leu Leu Ile Gly Leu Leu Thr Thr Tyr Ile Ile

CTT TTT ACA GAA TGG GGG AAC AAA ATC ATC GCT TCG TAT ATA GAG AAA AAA ATC AAC CCG AAC GAG
Leu Phe Thr Glu Trp Gly Asn Lys Ile Ile Ala Ser Tyr Ile Glu Lys Lys Ile Asn Pro Asn Glu

CGC TAC TTG AGC GTT AAA ACC TTT AAA TTG AGA TTC AAC TCT TTG GAT TTT AAA GCT CAA GCC AAC
Arg Tyr Leu Ser Val Lys Thr Phe Lys Leu Arg Phe Asn Ser Leu Asp Phe Lys Ala Gln Ala Asn

GAT GAT TCC ACG CTC ATT CTT AAG GGG GAT TTT TCA CTT TTA AAG CAA AGC GTG GAT TTG AAT TAC
Asp Asp Ser Thr Leu Ile Leu Lys Gly Asp Phe Ser Leu Leu Lys Gln Ser Val Asp Leu Asn Tyr

CAC ATA GAT ATT AAA GAT TTA CGC TCT TTC AAA GAA TGG ATA CCC TAC CCT TTA AGA GGG GCT ATT
His Ile Asp Ile Lys Asp Leu Arg Ser Phe Lys Glu Trp Ile Pro Tyr Pro Leu Arg Gly Ala Ile

ATT ACT TCT GGG AAT ATC AAA GGG CAT AGA AAA GCC CTT GTG ATT CAA GGC GTC TCT AAT GTC GCT
Ile Thr Ser Gly Asn Ile Lys Gly His Arg Lys Ala Leu Val Ile Gln Gly Val Ser Asn Val Ala
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Figure 15

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CAA TCC CAC ACT GCC TAC AAC GCC CTT TTA GAT GAT TTC AAG CTT TCT CAC TTA AGC TTG AAC GCA
Gln Ser His Thr Ala Tyr Asn Ala Leu Leu Asp Asp Phe Lys Leu Ser His Leu Ser Leu Asn Ala

AAA GAC GCC AAT TTA GAA GAT TTG CTT TAT TTA ATC AAT CGC CCC GCT TAT GCG AAC GCA AAA GTG
Lys Asp Ala Asn Leu Glu Asp Leu Leu Tyr Leu Ile Asn Arg Pro Ala Tyr Ala Asn Ala Lys Val

TCC TTA CAA GCG GAT TTT AAC TCT CTA AAG CCT TTA GAA GGG CAT TTG ATT CTA ACA GCC AAT AAC
Ser Leu Gln Ala Asp Phe Asn Ser Leu Lys Pro Leu Glu Gly His Leu Ile Leu Thr Ala Asn Asn

GCT TTA ATC AAT AAC GCC CTA ATC AAT CAA ATG TTT CAT TTA AAC CTT AAA GAC ACG CTT ATC TTC
Ala Leu Ile Asn Asn Ala Leu Ile Asn Gln Met Phe His Leu Asn Leu Lys Asp Thr Leu Ile Phe

AAC CTC TCG CAC TCA AGC GAC TTT AAA GAG AAC AAA GCC ATC AGC GAT ACC ACC CTG ACT AGC CCT
Asn Leu Ser His Ser Ser Asp Phe Lys Glu Asn Lys Ala Ile Ser Asp Thr Thr Leu Thr Ser Pro

TTA GCC AAT TTT ACA GCC CTA AAA AGC GAA TAC CTT TTC TCT ATT TTA AAA CTC AAT GCC CCC TAC
Leu Ala Asn Phe Thr Ala Leu Lys Ser Glu Tyr Leu Phe Ser Ile Leu Lys Leu Asn Ala Pro Tyr

ACT TTA GAA ATA CCC AAT CTG GCC AAA CTC CAA AAC ATG ACT AAC CAC CCC CTA AAA GGG AGT TTG
Thr Leu Glu Ile Pro Asn Leu Ala Lys Leu Gln Asn Met Thr Asn His Pro Leu Lys Gly Ser Leu

ACT TTA AAA GGC GCT ATA GAG CAA AGC CCC AAA CTC TTA AAA GTC AGC GGC CAT TCA AAT TTA CTG
Thr Leu Lys Gly Ala Ile Glu Gln Ser Pro Lys Leu Leu Lys Val Ser Gly His Ser Asn Leu Leu

GAT GGC ACG CTC GAT TTC ACG CTT TTA AAT AAA GAT TTG AAA GCC CGT TTT TCA AAT ATT TCC ACT
Asp Gly Thr Leu Asp Phe Thr Leu Leu Asn Lys Asp Leu Lys Ala Arg Phe Ser Asn Ile Ser Thr

TTA AAA GCC TTA GAT TTA TTC AAT TAC CCC AAG TTT TTC CAA TCC ATT GCA GAC GCT AAC TTG GAT
Leu Lys Ala Leu Asp Leu Phe Asn Tyr Pro Lys Phe Phe Gln Ser Ile Ala Asp Ala Asn Leu Asp

TAT GAC CTT AGC GCT AAG CAA GGC ACA TTG AAA GCC CGC CTA AAA AAC GCA AGA TTC CTC AAA AAT
Tyr Asp Leu Ser Ala Lys Gln Gly Thr Leu Lys Ala Arg Leu Lys Asn Ala Arg Phe Leu Lys Asn

GCA TTC AGC GAT TTC CTC TAC TCC ATT TCT CAA TTT GAT ATT ACT AAA GAA ATC TAT AAC GAT GCC
Ala Phe Ser Asp Phe Leu Tyr Ser Ile Ser Gln Phe Asp Ile Thr Lys Glu Ile Tyr Asn Asp Ala

AAT CTA GTA AGC CAA ATC AAC CAG CAA CGC CTG CTC TCT AGT CTC AGC TTA AAA AGC CCC AAA ACC
Asn Leu Val Ser Gln Ile Asn Gln Gln Arg Leu Leu Ser Ser Leu Ser Leu Lys Ser Pro Lys Thr

CAA TTG AAA ATC CAT AAC GGG CTT GTG GAT TTA AAC ACC AAA CAA ATG GAC ATG CTC ATA GAT GCG
Gln Leu Lys Ile His Asn Gly Leu Val Asp Leu Asn Thr Lys Gln Met Asp Met Leu Ile Asp Ala

GAA ATC TTA AAA TTC GTT TTT AAA ATG AAA CTT CAA GGC AAC ATA CAC CAG CCA AAA TTT TCC CTC
Glu Ile Leu Lys Phe Val Phe Lys Met Lys Leu Gln Gly Asn Ile His Gln Pro Lys Phe Ser Leu

ATT TTA AAC GAA AAA GCC ATC CAA CAA AAC CTG CAA CAA GGC TTG AAA GAA ATC CTA AAA AAC GAC
Ile Leu Asn Glu Lys Ala Ile Gln Gln Asn Leu Gln Gln Gly Leu Lys Glu Ile Leu Lys Asn Asp

ACC CTT AAA AAA GGT TTA GAT CAT TTG CTT AAA GAT GAT AAG CTC AAA GAA AAG CTT GAA AAA GGG
Thr Leu Lys Lys Gly Leu Asp His Leu Leu Lys Asp Asp Lys Leu Lys Glu Lys Leu Glu Lys Gly

CTT AAG GGG CTT TTT TAA
Leu Lys Gly Leu Phe ---
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HPC144

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ATG AAG AGA TCT TCT GTA TTT AGT TTC TTG GTA GCT TTT TTA TTG GTA ACT GGC TGT AGT CAT AAA
Met Lys Arg Ser Ser Val Phe Ser Phe Leu Val Ala Phe Leu Leu Val Thr Gly Cys Ser His Lys

ATG GAT AAT AAG ACT GTG GCC G
Met Asp Asn Lys Thr Val Ala
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HPC152

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TTG AAA CAT TTG ACC CCA CTC ACT CAC ACC CTT TTT AAA GCC TTA TGG CTA GGC ACG GTC TTA AGC
Met Lys His Leu Thr Pro Leu Thr His Thr Leu Phe Lys Ala Leu Trp Leu Gly Thr Val Leu Ser

GCA TCT TTA AGC TTA GTT GCA GCA GAA AGC CCC ACT AGA ACA GAG CCT AAA CCC GCT AAG GGG GTT
Ala Ser Leu Ser Leu Val Ala Ala Glu Ser Pro Thr Arg Thr Glu Pro Lys Pro Ala Lys Gly Val

AAA AAT AAA CCC AAA TCG CCC GTT ACT AAA GTC ATG ATG ACC AAT TGC GAC AAC CTT AAA GAC TTT
Lys Asn Lys Pro Lys Ser Pro Val Thr Lys Val Met Met Thr Asn Cys Asp Asn Leu Lys Asp Phe

AAC GCT AAT CAA AAA GAA GTT CTA AAA GCC GCC TAT CAA TTC GGC TCT AAA GAA AAT TTA GGC TAT
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Figure 15

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Asn Ala Asn Gln Lys Glu Val Leu Lys Ala Ala Tyr Gln Phe Gly Ser Lys Glu Asn Leu Gly Tyr

GAA ATG GCA GGC ATT GCA TGG AAA GAA TCA TGT GCA GGG GTT TAT AAA ATC AAT TTT TCC GAT CCG
Glu Met Ala Gly Ile Ala Trp Lys Glu Ser Cys Ala Gly Val Tyr Lys Ile Asn Phe Ser Asp Pro

AGT GCG GGC GTG TAT CAT TCT TAT ATC CCA AGC GTT CTA AAA AGC TAT GGG CAT AAT GAT AGC CCC
Ser Ala Gly Val Tyr His Ser Tyr Ile Pro Ser Val Leu Lys Ser Tyr Gly His Asn Asp Ser Pro

TTT TTG CGT AAT GTG ATG GGG GAA TTG CTC ATT AAA GAC GAT GCG TTT GCT TCT GAA GTG GCT TTA
Phe Leu Arg Asn Val Met Gly Glu Leu Leu Ile Lys Asp Asp Ala Phe Ala Ser Glu Val Ala Leu

AAA GAG TTG CTC TAT TGG AAA ACA CGC TAC CAT GAC AAT CTA AAA GAC ATG ATT AAA TCT TAC AAC
Lys Glu Leu Leu Tyr Trp Lys Thr Arg Tyr His Asp Asn Leu Lys Asp Met Ile Lys Ser Tyr Asn

AAG GGC AGT CGT TGG GAA AAA AAC GAG AAG TCT AAC GCC GAA GCT GAA AAA TAT TAT GAA GAG ATA
Lys Gly Ser Arg Trp Glu Lys Asn Glu Lys Ser Asn Ala Glu Ala Glu Lys Tyr Tyr Glu Glu Ile

CAA GAC AGG ATC AGG CGT TTG AAA GAA TCT AAA ATC TTT GAT TCG CAG TCT AGT AAT GAC CAA GAA
Gln Asp Arg Ile Arg Arg Leu Lys Glu Ser Lys Ile Phe Asp Ser Gln Ser Ser Asn Asp Gln Glu

TTG CAA AAA AGC GCT AAT AGC AAC CTG GAT TTA GAC CCT ATC GGC AGC ACC ATG CCC CAA ACT TTA
Leu Gln Lys Ser Ala Asn Ser Asn Leu Asp Leu Asp Pro Ile Gly Ser Thr Met Pro Gln Thr Leu

GCC ACC CAA AAA TCT CAA ATA GAA AAA TCT CAA ATA GAG GAA ACC CAA GCA GAA AAA CCC CAA GAA
Ala Thr Gln Lys Ser Gln Ile Glu Lys Ser Gln Ile Glu Glu Thr Gln Ala Glu Lys Pro Gln Glu

ATG AAA GAG ACA ACT AGC GAG CAA ATA ACC AAC AAG CCA GAA AAA GCA AAA GAT AAA CCC ATG TAT
Met Lys Glu Thr Thr Ser Glu Gln Ile Thr Asn Lys Pro Glu Lys Ala Lys Asp Lys Pro Met Tyr

TTG GCT CAA ATC AAT AGC ACT GAT TTC ACA CCC GCT AAA AAA CGC TCT CAA AAA CCG GCT AGA GTG
Leu Ala Gln Ile Asn Ser Thr Asp Phe Thr Pro Ala Lys Lys Arg Ser Gln Lys Pro Ala Arg Val

AGC CAA AAA CGC TCC TCT AAA AAT AAT ATC AGC GTT AAA AAC AAC ACC AAA ACC GCT TCC AAA AAT
Ser Gln Lys Arg Ser Ser Lys Asn Asn Ile Ser Val Lys Asn Asn Thr Lys Thr Ala Ser Lys Asn

TCC AAA AAT AAA GAA ATG TGC AAA AAT TGC TCT CCA GGG CAA AGG AAT GCG ATT TTA GCT AAC CAC
Ser Lys Asn Lys Glu Met Cys Lys Asn Cys Ser Pro Gly Gln Arg Asn Ala Ile Leu Ala Asn His

ATC ACT CTC ATG CAA GAG CTT TAA
Ile Thr Leu Met Gln Glu Leu ---

HPC155
  G ATC ATT ATC GTG CCG TTA CCG CCT TTT GTG TTG GAT TTT THA CTC ACG ATT TCT ATT GCG CTA TCG
    Ile Ile Ile Val Pro Leu Pro Pro Phe Val Leu Asp Phe   ? Leu Thr Ile Ser Ile Ala Leu Ser

    GTG TTG ATT ATT TTA ATC GGG CTT TAT ATT GAC AAG CCG ACT GAT TTT AGC GCT TTC CCC ACT CTA
    Val Leu Ile Ile Leu Ile Gly Leu Tyr Ile Asp Lys Pro Thr Asp Phe Ser Ala Phe Pro Thr Leu

    TTA CTC ATT GTA ACC CTA TAC CGC TTG GCT TTA AAT GTC GCC ACC ACT AGA ATG ATT TTA ACG CAA
    Leu Leu Ile Val Thr Leu Tyr Arg Leu Ala Leu Asn Val Ala Thr Thr Arg Met Ile Leu Thr Gln

    GGC TAT AAA GGG CCT AGC ACG GTG AGC GAT ATT ATC ACG GCG TTT GGG GAA TTT AGC GTG AGC GGG
    Gly Tyr Lys Gly Pro Ser Thr Val Ser Asp Ile Ile Thr Ala Phe Gly Glu Phe Ser Val Ser Gly

    AAT TAT GTG ATT GGT GCG ATT ATC TTT AGT ATT TTA GTG CTG GTG AAT CTA TTA GTG GTT ACT AAT
    Asn Tyr Val Ile Gly Ala Ile Ile Phe Ser Ile Leu Val Leu Val Asn Leu Leu Val Val Thr Asn

    GGC TCT ACT AGG GTT ACT GAA GTG AGA GCG CGA TTC GCT CTA GAC GCT ATG CCA GGA AAG CAA ATG
    Gly Ser Thr Arg Val Thr Glu Val Arg Ala Arg Phe Ala Leu Asp Ala Met Pro Gly Lys Gln Met

    GCG ATT GAT GCG GAT TTA AAT TCA GGG CTT ATT GAT GAT AAG GAA GCC AAA AAA CGG CGC GCC GCT
    Ala Ile Asp Ala Asp Leu Asn Ser Gly Leu Ile Asp Asp Lys Glu Ala Lys Lys Arg Arg Ala Ala

    CTA AGC CAA GAA GCG GAT TTT TAT GGC GCG ATG GAT GGC GCG TCT AAA TTC GTC AAA GGC GAT GCG
    Leu Ser Gln Glu Ala Asp Phe Tyr Gly Ala Met Asp Gly Ala Ser Lys Phe Val Lys Gly Asp Ala

    ATC GCT TCT ATT ATC ATC ACG CTT ATC AAT ATC ATT GGA GGG TTT TTA GTG GGC GTG TTC CAA AGG
    Ile Ala Ser Ile Ile Ile Thr Leu Ile Asn Ile Ile Gly Gly Phe Leu Val Gly Val Phe Gln Arg

    GAT ATG AGT TTG AGC TTT AGC GCT AGC ACT TTC ACT ATC TTA ACC ATT GGC GAT GGG CTT GTA GGG
    Asp Met Ser Leu Ser Phe Ser Ala Ser Thr Phe Thr Ile Leu Thr Ile Gly Asp Gly Leu Val Gly

    CAA ATC CCT GCT TTA ATC ATT GCG ACA GCG ACC G
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Figure 15

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Gln Ile Pro Ala Leu Ile Ile Ala Thr Ala Thr


HPC165
      ATG AAA AAG TTT AAA AAG AAA CCA AAA AGT ATC AAA CGA TTG CAT CAA AAT CAA AAA ACA ATC TTA
      Met Lys Lys Phe Lys Lys Lys Pro Lys Ser Ile Lys Arg Leu His Gln Asn Gln Lys Thr Ile Leu

      AAG CGT CCT TTA TGG CTC GCA CCT TTA CTC ATC AGC GGG TTT GTT AGT GGG GTG TAT GCT GAT GGA
      Lys Arg Pro Leu Trp Leu Ala Pro Leu Leu Ile Ser Gly Phe Val Ser Gly Val Tyr Ala Asp Gly

      ACA GAC ATT TTG GGG CTT AGT TGG GGT GAA AAA AGC CAA AAG GTA TGC GTG CAT CAT CCA TGG TAT
      Thr Asp Ile Leu Gly Leu Ser Trp Gly Glu Lys Ser Gln Lys Val Cys Val His His Pro Trp Tyr

      GCT ATA TGG AGT TGC GAT AAA TGG GAG GAA AAA ACA CAA CAA TTC ACA GGA AAC CAA CTC ATC ACA
      Ala Ile Trp Ser Cys Asp Lys Trp Glu Glu Lys Thr Gln Gln Phe Thr Gly Asn Gln Leu Ile Thr

      AAA ACT TGG GCA GGG GGT AAT GCG GCT AAT TAC TAC CAC ACT CAA AAC AAC CAA AAT ATT ACA GCC
      Lys Thr Trp Ala Gly Gly Asn Ala Ala Asn Tyr Tyr His Thr Gln Asn Asn Gln Asn Ile Thr Ala

      AAT TTA AAA AAT GAT AAC GGC ACT TAT TTT TTA AGC GGT CTG TAT AAC TAC ACC
      Asn Leu Lys Asn Asp Asn Gly Thr Tyr Phe Leu Ser Gly Leu Tyr Asn Tyr Thr

HPC183
      ATG TTA GTT ACT CGC TTT AAA AAA GCT TTG ATC TCT TAT TCT TTA GGT GCG CTC ATT GTT TCA TCG
      Met Leu Val Thr Arg Phe Lys Lys Ala Leu Ile Ser Tyr Ser Leu Gly Ala Leu Ile Val Ser Ser

      TTA TTG GGC GTG GCT AAC GCT TCA GCA CAA GAG GTT AAA GTC AAG GAT TAT TTC GGG GAG CAA ACT
      Leu Leu Gly Val Ala Asn Ala Ser Ala Gln Glu Val Lys Val Lys Asp Tyr Phe Gly Glu Gln Thr

      GTA AAG CTT CCT GTT TCT AAA ATA GCC TAT ATA GGG AGC TAT GTA GAA GTG CCT GCC ATG CTT AAT
      Val Lys Leu Pro Val Ser Lys Ile Ala Tyr Ile Gly Ser Tyr Val Glu Val Pro Ala Met Leu Asn

      GTT TGG AAT AGG GTT GTA GGC GTT TCG GAT TAC GCT TTT AAA GAT GAC ATT GTT AAA GCC ACT CTC
      Val Trp Asn Arg Val Val Gly Val Ser Asp Tyr Ala Phe Lys Asp Asp Ile Val Lys Ala Thr Leu

      AAA GGC GAA GAT CTT AAA CGC GTC AAA CAC ATG AGC ACT GAT CAT ACA GCC GCA CTA AAT GTA GAG
      Lys Gly Glu Asp Leu Lys Arg Val Lys His Met Ser Thr Asp His Thr Ala Ala Leu Asn Val Glu

      CTT TTA AAA AAG CTC AGC CCT GAT CTT GTG GTA ACC TTT GTG GGC AAC CCT AAA GCG GTA GAG CAT
      Leu Leu Lys Lys Leu Ser Pro Asp Leu Val Val Thr Phe Val Gly Asn Pro Lys Ala Val Glu His

      GCG AAA AAA TTT GGT ATA TCA TTT CTT TCT TTC CAA GAG ACA ACG ATC GCA GAG GCC ATG CAG GCT
      Ala Lys Lys Phe Gly Ile Ser Phe Leu Ser Phe Gln Glu Thr Thr Ile Ala Glu Ala Met Gln Ala

      ATG CAA GCT CAA GCT GCG GTC TTA GAA ATT GAC GCT TCT AAA AAA TTC GCC AAA ATG CAA GAA ACT
      Met Gln Ala Gln Ala Ala Val Leu Glu Ile Asp Ala Ser Lys Lys Phe Ala Lys Met Gln Glu Thr

      TTG GAT TTT ATC GCT GAG CGT TTG AAA GAT GTC AAA AAG AAA AAG GGG GTG GAG CTT TTC CAT AAA
      Leu Asp Phe Ile Ala Glu Arg Leu Lys Asp Val Lys Lys Lys Lys Gly Val Glu Leu Phe His Lys

      GCC AAT AAA ATT AGC GGC CAT CAA GCC ATT AGC TCA GAC ATT TTA GAA AAA GGG GGC ATA GAC AAT
      Ala Asn Lys Ile Ser Gly His Gln Ala Ile Ser Ser Asp Ile Leu Glu Lys Gly Gly Ile Asp Asn

      TTT GGC TTG AAA TAC GTC AAA TTT GGG CGC GCT GAT ATT AGC GTG GAA AAA ATC GTT AAA GAA AAC
      Phe Gly Leu Lys Tyr Val Lys Phe Gly Arg Ala Asp Ile Ser Val Glu Lys Ile Val Lys Glu Asn

      CCT GAA ATC ATT TTC ATC TGG TGG GTA AGC CCA CTC ACG CCT GAA GAT GTG TTA AAC AAC CCT AAG
      Pro Glu Ile Ile Phe Ile Trp Trp Val Ser Pro Leu Thr Pro Glu Asp Val Leu Asn Asn Pro Lys

      TTT TCC ACT ATT AAA GCC ATT AAA AAC AAG CAA GTT TAT AAA CTC CCC ACA ATG GAT ATT GGC GGG
      Phe Ser Thr Ile Lys Ala Ile Lys Asn Lys Gln Val Tyr Lys Leu Pro Thr Met Asp Ile Gly Gly

      CCT AGA GCC CCA CTC ATA AGC TTA TTT ATC GCT TTA AAA GCC CAC CCT GAA GCC TTT AAG GGC GTG
      Pro Arg Ala Pro Leu Ile Ser Leu Phe Ile Ala Leu Lys Ala His Pro Glu Ala Phe Lys Gly Val

      GAT ATT AAT GCG ATT GTT AAA GAC TAC TAT AAA GTG GTT TTT GAT TTG AAC GAT GCA GAG GTT GAA
      Asp Ile Asn Ala Ile Val Lys Asp Tyr Tyr Lys Val Val Phe Asp Leu Asn Asp Ala Glu Val Glu

      CCC TTT TTA TGG CAT TAA
      Pro Phe Leu Trp His ---


HPC186
     ATG GGC GGA TTC ACA AGC ATA TGG CAT TGG GTC ATT GTT TTA TTA GTG ATT GTG TTG TTG TTT GGG
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Figure 15

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Met Gly Gly Phe Thr Ser Ile Trp His Trp Val Ile Val Leu Leu Val Ile Val Leu Leu Phe Gly

GCT AAA AAG ATC CCA GAA TTG GCT AAG GGT TTA GGC AGT GGG ATT AAG AAT TTC AAA AAA GCC GTG
Ala Lys Lys Ile Pro Glu Leu Ala Lys Gly Leu Gly Ser Gly Ile Lys Asn Phe Lys Lys Ala Val

AAA GAC GAT GAA GAA GAG GCT AAA AAC GAG CCA AAA ACC CTA GAC GCT CAA GCA ACG CAA ACC AAA
Lys Asp Asp Glu Glu Glu Ala Lys Asn Glu Pro Lys Thr Leu Asp Ala Gln Ala Thr Gln Thr Lys

GTG CAT GAG AGT AGC GAG ATT AAA AGC AAA CAA GAA AGT TAA
Val His Glu Ser Ser Glu Ile Lys Ser Lys Gln Glu Ser ---


HPC188
ATG AAA AAC TTT TCC CCA CTT TGT TGT TTT AAA AAG CTC AAA AAA CGC CAT TTA ATC GCT TTG AGC
Met Lys Asn Phe Ser Pro Leu Cys Cys Phe Lys Lys Leu Lys Lys Arg His Leu Ile Ala Leu Ser

CTG CCC TTG CTT TCT TAT GCC AAT GGC TTT AAA ATC CAA GAG CAA AGC CTA AAT GGC ACG GCT TTA
Leu Pro Leu Leu Ser Tyr Ala Asn Gly Phe Lys Ile Gln Glu Gln Ser Leu Asn Gly Thr Ala Leu

GGC TCG GCG TAT GTC GCT GGG GCT AGG GGT GCT GAT GCT TCC TTT TAT AAC CCG GCG AAT ATG GGC
Gly Ser Ala Tyr Val Ala Gly Ala Arg Gly Ala Asp Ala Ser Phe Tyr Asn Pro Ala Asn Met Gly

TTT ACT AAC GAT TGG GGT GAA AAC AGA AGC GAA TTT GAA ATG ACC ACC ACC GTG ATT AAC ATT CCG
Phe Thr Asn Asp Trp Gly Glu Asn Arg Ser Glu Phe Glu Met Thr Thr Thr Val Ile Asn Ile Pro

HPC190
TTG GAA TTG AAA AAA ATC GCC CTT ATT TTA GAT GGC ATT GTA GCA AAA AAT TTT TTA GAC TTG GTG
Met Glu Leu Lys Lys Ile Ala Leu Ile Leu Asp Gly Ile Val Ala Lys Asn Phe Leu Asp Leu Val

CTA AGG CAT TAT TCT AAT CAT AAT TTT TAT ATA GTG GTT GTC AAA AAT GAG AGC CTT ATC CCT AAA
Leu Arg His Tyr Ser Asn His Asn Phe Tyr Ile Val Val Val Lys Asn Glu Ser Leu Ile Pro Lys

AAT TAC CCG AGC ACT TTC GCT TTT TAT TGT TTT GAT GCG ACT TCT AGT TTC AGG CTT TTG CAA GTG
Asn Tyr Pro Ser Thr Phe Ala Phe Tyr Cys Phe Asp Ala Thr Ser Ser Phe Arg Leu Leu Gln Val

TTA AAC GAT GAG GTG AGC GAT GCG TTT TTA ATC ATA CAA GAT TTT AAA GAA CAG CGC ATC ATT CAT
Leu Asn Asp Glu Val Ser Asp Ala Phe Leu Ile Ile Gln Asp Phe Lys Glu Gln Arg Ile Ile His

AAA ATC ATT CAA ACC CAT TTC AAA CGC ATG CGC GTG GTT TTG AGC GTG AAA AAA GAT GGT GAA AAA
Lys Ile Ile Gln Thr His Phe Lys Arg Met Arg Val Val Leu Ser Val Lys Lys Asp Gly Glu Lys

ACT TTA GAA AAT AAT GAA GAA AAT AAA GAT GAA AAG CTT ATT TTG ATT GAT GAA TTT GAA GTT TTA
Thr Leu Glu Asn Asn Glu Glu Asn Lys Asp Glu Lys Leu Ile Leu Ile Asp Glu Phe Glu Val Leu

GCC AAT AAA TTC ATT TCT CGT TTG CCT AAT ATC CCT AGC ACC CCT AGA GAA TTT GGG TTA GGC AAA
Ala Asn Lys Phe Ile Ser Arg Leu Pro Asn Ile Pro Ser Thr Pro Arg Glu Phe Gly Leu Gly Lys

GGC GAG ATC ATG GAG ATT GAT GTG CCT TTT GGG AGT ATT TTT GCT TAC AGG CAT ATT GGC TCT ATC
Gly Glu Ile Met Glu Ile Asp Val Pro Phe Gly Ser Ile Phe Ala Tyr Arg His Ile Gly Ser Ile

AGG CAA AAA GAA TAC AGG ATT GTA GGG CTT TAT CGC AAC GAT GTT TTG TTG CTC TCC ACT AAA TCT
Arg Gln Lys Glu Tyr Arg Ile Val Gly Leu Tyr Arg Asn Asp Val Leu Leu Leu Ser Thr Lys Ser

TTA GTT ATC CAG CCA CGA GAC ATT CTT TTA GTG GCG GGT AAT CCG GAA ATT TTA AAC GCG GTG TAT
Leu Val Ile Gln Pro Arg Asp Ile Leu Leu Val Ala Gly Asn Pro Glu Ile Leu Asn Ala Val Tyr

CTT CAG GTC AAA AGC AAT GTC GGG CAG TTC CCA GCC CCC TTT GGT AAG AGC ATT TAT TTA TAC ATT
Leu Gln Val Lys Ser Asn Val Gly Gln Phe Pro Ala Pro Phe Gly Lys Ser Ile Tyr Leu Tyr Ile

GAT ATG CGC TTA CAA AGC CGA AAA GCA ATG ATG CGC GAT GTG TAT CAA GCC TTG TTT TTG CAC AAA
Asp Met Arg Leu Gln Ser Arg Lys Ala Met Met Arg Asp Val Tyr Gln Ala Leu Phe Leu His Lys

CAT TTA AAG AGC TAC AAG CTC TAC ATT CAG GTT TTA CAC CCC ACT AGC CCT AAG TTT TAC CAT AAA
His Leu Lys Ser Tyr Lys Leu Tyr Ile Gln Val Leu His Pro Thr Ser Pro Lys Phe Tyr His Lys

TTT TTA TCG CTA GAA ACC GAA AGC ATT GAA GTG AAT TTT GAT TTT TAT GGG AAA AGT TTT ATC CAA
Phe Leu Ser Leu Glu Thr Glu Ser Ile Glu Val Asn Phe Asp Phe Tyr Gly Lys Ser Phe Ile Gln

AAA CTC CAT GAA GAC CAC CAG AAA AAA ATG GGT TTG ATT GTG GTA GGC AGA GAG CTT TTT TTA TCT
Lys Leu His Glu Asp His Gln Lys Lys Met Gly Leu Ile Val Val Gly Arg Glu Leu Phe Leu Ser

AAA AAA CAC CGA AAA GCC CTA TAT AAA ACA GCC ACC CCG GTT TAT AAA ACC AAC ACT TCC GGC TTG
Lys Lys His Arg Lys Ala Leu Tyr Lys Thr Ala Thr Pro Val Tyr Lys Thr Asn Thr Ser Gly Leu
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Figure 15

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TCT AAA ACC TCT CAA AGC GTG GTG GTG TTG AAT GAA AGC TTG GAT ATC AAT GAG GAC ATG TCT TCA
Ser Lys Thr Ser Gln Ser Val Val Val Leu Asn Glu Ser Leu Asp Ile Asn Glu Asp Met Ser Ser

GTG ATC TTT GAT GTG TCT ATG CAA ATG GAT TTG GGC TTG TTG CTC TAT GAT TTT GAC CCT AAC AAG
Val Ile Phe Asp Val Ser Met Gln Met Asp Leu Gly Leu Leu Leu Tyr Asp Phe Asp Pro Asn Lys

CGC TAT AAA AAC GAG ATT GTC AAT CAT TAT GAA AAT TTA GCC AAC ACG CTC AAC CGC AAG ATT GAG
Arg Tyr Lys Asn Glu Ile Val Asn His Tyr Glu Asn Leu Ala Asn Thr Leu Asn Arg Lys Ile Glu

ATT TTT CAA ACC GAT ATT AGA AAT CCT ATC ATG TAT CTC AAT TCT TTA AGA AAT CCC ATT TTG CAT
Ile Phe Gln Thr Asp Ile Arg Asn Pro Ile Met Tyr Leu Asn Ser Leu Arg Asn Pro Ile Leu His

TTC ATG CCT TTT GAA GAG TGC ATC ACG CAC ACG CGC TTT TGG TGG TTT TTA TCC ACT AAA GTG GAA
Phe Met Pro Phe Glu Glu Cys Ile Thr His Thr Arg Phe Trp Trp Phe Leu Ser Thr Lys Val Glu

AAA TTA GCG TTT TTA AAC GAT GAT AAC CCT CAA ATT TTT ATC CCT GTA GCG GAG TGA
Lys Leu Ala Phe Leu Asn Asp Asp Asn Pro Gln Ile Phe Ile Pro Val Ala Glu ---
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HPN013

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ATG AAA GCG TTG AAG ACT TTT TTA AAA AAA TCC CTT ATT CTG TTA CTA GCA ATT GCC TTA AAC CAC
Met Lys Ala Leu Lys Thr Phe Leu Lys Lys Ser Leu Ile Leu Leu Leu Ala Ile Ala Leu Asn His

TTA AAC GCT GTG GCT ATG ATT GTG GAT AAT CCT ACG CAG AAC GCT TGG AAT GGT GCT AAA AGA GCA
Leu Asn Ala Val Ala Met Ile Val Asp Asn Pro Thr Gln Asn Ala Trp Asn Gly Ala Lys Arg Ala

TGG GAT GAA AGC AAG TGG GCT AAA CAT TTA GCC ACT ATT ACT GAA AGG ATC AAG CTC GCT CAA GAC
Trp Asp Glu Ser Lys Trp Ala Lys His Leu Ala Thr Ile Thr Glu Arg Ile Lys Leu Ala Gln Asp

ACA TTA GAT AGG GCT AAT CAG ACG CTT AAT TCC ATC AAC AAA GTG AAT GAT GTT TTG AAC AAA ACC
Thr Leu Asp Arg Ala Asn Gln Thr Leu Asn Ser Ile Asn Lys Val Asn Asp Val Leu Asn Lys Thr

AAT CAA TTT CTA ACA GGC AGT ATT TTA AGC ATC CCC AAT CCC ATG CAG TAT GTA GAA AAA ATC CAA
Asn Gln Phe Leu Thr Gly Ser Ile Leu Ser Ile Pro Asn Pro Met Gln Tyr Val Glu Lys Ile Gln

AGT TTT GCC AAG CAA GTT CAA GCC AAT ACT GAA AGG ATC AAA GAA AAT GCA CAA AAC TAT GAT ATA
Ser Phe Ala Lys Gln Val Gln Ala Asn Thr Glu Arg Ile Lys Glu Asn Ala Gln Asn Tyr Asp Ile

CGC AAT CAA ATT GCA GCC AAA CGC ATC TCT GAA AAA TGC CCT GAA CTC AAT TGG GAT GTC AGT CAA
Arg Asn Gln Ile Ala Ala Lys Arg Ile Ser Glu Lys Cys Pro Glu Leu Asn Trp Asp Val Ser Gln

GAC GCG AGC CCT ACA GAG AAA AAC TTA CAC CAA TTT TTC ACG AGC AAG GGG AAA GAA AGC GCT AAC
Asp Ala Ser Pro Thr Glu Lys Asn Leu His Gln Phe Phe Thr Ser Lys Gly Lys Glu Ser Ala Asn

ACA AAG GCT CTA AAG GAT TTT GCT AAC GCC ATA GGT AAC ACT CAA ATC AGC ACG GCG AAC GAT TTA
Thr Lys Ala Leu Lys Asp Phe Ala Asn Ala Ile Gly Asn Thr Gln Ile Ser Thr Ala Asn Asp Leu

GGA GCT GGA CTT AGA GGC AGA GCC TTA TTA GAA TAC ATT TGC ATT CAA AAA GGC AAT TTA GAA GCG
Gly Ala Gly Leu Arg Gly Arg Ala Leu Leu Glu Tyr Ile Cys Ile Gln Lys Gly Asn Leu Glu Ala

GCT AAA AAA ATC CAA TTA TTA GAC AGC CAA ATG ACT TTA GCT CTA CTC AAT AAC GAC TAT ACG GCT
Ala Lys Lys Ile Gln Leu Leu Asp Ser Gln Met Thr Leu Ala Leu Leu Asn Asn Asp Tyr Thr Ala

TAT GAA AAA CTT AGA GCT GAA AAA GAA GAA TTA AAA AGA CAA ATC GCT TCA AAT GTG TAT GCG AAA
Tyr Glu Lys Leu Arg Ala Glu Lys Glu Glu Leu Lys Arg Gln Ile Ala Ser Asn Val Tyr Ala Lys

GTC AAA CAG CTT GTT GTA GCT TCC CAA GAT AGA GCG TTT AGT CAA ATG GAT AAT GAG TTG GGC GTT
Val Lys Gln Leu Val Val Ala Ser Gln Asp Arg Ala Phe Ser Gln Met Asp Asn Glu Leu Gly Val

AAA ACT TTT GGG TTC AAC GAT GAG AAT GTT AAA AAA GGT TAT TGC AAG AAA GAA AAC AGA AAT GGC
Lys Thr Phe Gly Phe Asn Asp Glu Asn Val Lys Lys Gly Tyr Cys Lys Lys Glu Asn Arg Asn Gly

AAA AGC GAG TGC ATC CCT AAC ATG CTC AAT GTT AAT CGC TTA AAA GCG CAA TTT GAT GAG CTT AAT
Lys Ser Glu Cys Ile Pro Asn Met Leu Asn Val Asn Arg Leu Lys Ala Gln Phe Asp Glu Leu Asn

TTA GAT TAT AGT AGG GAT ATT GCT GGT AAA AAA GGT GAA GCA GCC GCT AAA GTG TTC AAT GAC TAC
Leu Asp Tyr Ser Arg Asp Ile Ala Gly Lys Lys Gly Glu Ala Ala Ala Lys Val Phe Asn Asp Tyr

AAA CAC CGA TTC CAA CAA TTA AGC GTA GAA ACT GCT TTA GAA ATC GCT CAA AAT TTA AGT TTT ATG
Lys His Arg Phe Gln Gln Leu Ser Val Glu Thr Ala Leu Glu Ile Ala Gln Asn Leu Ser Phe Met

AAT AAG ACG CTA GGT TTA ATG GTG CAA ATG CAA AGC TAT GCA TTC AAG CAA CAA ATG GGC TAT TTT
Asn Lys Thr Leu Gly Leu Met Val Gln Met Gln Ser Tyr Ala Phe Lys Gln Gln Met Gly Tyr Phe
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Figure 15

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GAA GAT ATT ATT CCT GCT GAC GCC CTA AAA GAT GAC AAA GAG CAT CAA GAA AAT CTT GAA CAA AAA
Glu Asp Ile Ile Pro Ala Asp Ala Leu Lys Asp Asp Lys Glu His Gln Glu Asn Leu Glu Gln Lys

CAA CAA GAA ATA GAG AAA GTC TAT AGG GCT AAA TTA GAC GCT TAT GGT TTC CCT AAT GGT AGT GTA
Gln Gln Glu Ile Glu Lys Val Tyr Arg Ala Lys Leu Asp Ala Tyr Gly Phe Pro Asn Gly Ser Val

GGA AAG GCA AGT GGC GTG AAT TCA AAT AGT AAT AAT GAA GCC CCA AGC TCT GAT AAT ATC CAG TCG
Gly Lys Ala Ser Gly Val Asn Ser Asn Ser Asn Asn Glu Ala Pro Ser Ser Asp Asn Ile Gln Ser

TTT AAT CCG TAT TGA
Phe Asn Pro Tyr ---
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HPN048

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GTG CAA CCG ATG AAA TCT AAA AAA CTT TAT TTG GCT TTA ATC ATA GGG GTT TTA TTA GCG TTT TTA
Met Gln Pro Met Lys Ser Lys Lys Leu Tyr Leu Ala Leu Ile Ile Gly Val Leu Leu Ala Phe Leu

ACC CTA TCT TCA TGG CTG GGT AAT AGC GGT TTA GTG GGG CGT TTT GGG GTG TGG TTT GCC GCA CTC
Thr Leu Ser Ser Trp Leu Gly Asn Ser Gly Leu Val Gly Arg Phe Gly Val Trp Phe Ala Ala Leu

AAT AAA AAA TAT TTT GGG CAT CTT TCA TTC ATT AAT TTA CCC TAT TTA GCA TGG GTT TTA TTC CTT
Asn Lys Lys Tyr Phe Gly His Leu Ser Phe Ile Asn Leu Pro Tyr Leu Ala Trp Val Leu Phe Leu

TTA TAC AAG ACT AAA AAC CCT TTT ACA GAA ATC GTT TTA GAA AAA ACT TTA GGG CAT CTA TTA GGC
Leu Tyr Lys Thr Lys Asn Pro Phe Thr Glu Ile Val Leu Glu Lys Thr Leu Gly His Leu Leu Gly

ATT TTA TCT TTG CTC TTT TTA CAA TCT AGC CTA TTA AAT CAA GGG GAA ATC GGC AAC AGC GCG CGT
Ile Leu Ser Leu Leu Phe Leu Gln Ser Ser Leu Leu Asn Gln Gly Glu Ile Gly Asn Ser Ala Arg

TTG TTT TTA CGC CCT TTT ATA GGG GAT TTT GGG CTT TAT GCG CTG ATA ACG CTT ATG GTA GTT ATT
Leu Phe Leu Arg Pro Phe Ile Gly Asp Phe Gly Leu Tyr Ala Leu Ile Thr Leu Met Val Val Ile

TCT TAT TTG ATT CTA TTC AAA CTA CCC CCT AAA AGC GTT TTT TAT CCT TAT ATG AAC AAA ACA CAA
Ser Tyr Leu Ile Leu Phe Lys Leu Pro Pro Lys Ser Val Phe Tyr Pro Tyr Met Asn Lys Thr Gln

AAC CTT TTA AAA GAG ATT TAC AAA CAA TGC TTA CAA GCC TTT AGC CCT AAT TTT AGC CCA AAA AAA
Asn Leu Leu Lys Glu Ile Tyr Lys Gln Cys Leu Gln Ala Phe Ser Pro Asn Phe Ser Pro Lys Lys

GAG GGT TTT GAA AAC ACC CCA TCA GAT ATT CAA AAA AAA GAA ACC AAA AAC GAC AAA GAA AAA GAA
Glu Gly Phe Glu Asn Thr Pro Ser Asp Ile Gln Lys Lys Glu Thr Lys Asn Asp Lys Glu Lys Glu

AAC CGC AAA GAA AAC CCT ATT AAT GAA AAC CAC AAA ACC CCT AAC GAA GAA CCG TTT TTA GCG ATC
Asn Arg Lys Glu Asn Pro Ile Asn Glu Asn His Lys Thr Pro Asn Glu Glu Pro Phe Leu Ala Ile

CCT ACC CCC TAT AAC ACG ACT TTA AAT GAT TCA GAG CCG CAA GAA GGC TTA GTC CAA ATT TCC TCC
Pro Thr Pro Tyr Asn Thr Thr Leu Asn Asp Ser Glu Pro Gln Glu Gly Leu Val Gln Ile Ser Ser

CAC CCC CCT ACC CAT TAC ACC ATT TAC CCT AAA AGA AAC CGA TTT GAT GAT TTG ACT AAC CCC ACT
His Pro Pro Thr His Tyr Thr Ile Tyr Pro Lys Arg Asn Arg Phe Asp Asp Leu Thr Asn Pro Thr

AAC CCC CCT TTA AAA GAA ATT AAA CAA GAA ACT AAA GAA AGA GAA CCC ACG CCT ACA AAA GAA ACT
Asn Pro Pro Leu Lys Glu Ile Lys Gln Glu Thr Lys Glu Arg Glu Pro Thr Pro Thr Lys Glu Thr

CTT ACG CCC ACC ACG CCC AAA CCT ATC ATG CCC ACA CTT GCA CCC ATA ATA GAA AAT GAC AAC AAA
Leu Thr Pro Thr Thr Pro Lys Pro Ile Met Pro Thr Leu Ala Pro Ile Ile Glu Asn Asp Asn Lys

ACA GAA AAC CAA AAA ACC CCC AAC CAC CCT AAA AAA GAA GAA AAC CCA CAA GAA AAC ACG CAA GAA
Thr Glu Asn Gln Lys Thr Pro Asn His Pro Lys Lys Glu Glu Asn Pro Gln Glu Asn Thr Gln Glu

GAA ATG ATA GAA GGA AGG ATA GAA GAA ATG ATA AAG GAA AAT CTA AAA AAA GAA GAA AAA GAA GTG
Glu Met Ile Glu Gly Arg Ile Glu Glu Met Ile Lys Glu Asn Leu Lys Lys Glu Glu Lys Glu Val

CAA AAC GCT CCA AAC TTT AGC CCA GTA ACC CCC ACA AGC GCT AAA AAA CCC GTT ATG GTT AAA GAA
Gln Asn Ala Pro Asn Phe Ser Pro Val Thr Pro Thr Ser Ala Lys Lys Pro Val Met Val Lys Glu

TTG AGC GAA AAT AAA GAG ATA TTA GAC GGA TTG GAT TAT GGC GAA GTG CAA AAA CCC AAA GAT TAT
Leu Ser Glu Asn Lys Glu Ile Leu Asp Gly Leu Asp Tyr Gly Glu Val Gln Lys Pro Lys Asp Tyr

GAG CTT CCC ACC ACG CAA TTA TTG AAT GCG GTT TGT TTG AAA GAC ACT TCT TTA GAC GAA AAC GAG
Glu Leu Pro Thr Thr Gln Leu Leu Asn Ala Val Cys Leu Lys Asp Thr Ser Leu Asp Glu Asn Glu

ATT GAC CAA AAA ATC CAG GAT CTA TTG AGC AAA CTG CGC ACC TTT AAA ATT GAT GGC GAT ATT ATC
Ile Asp Gln Lys Ile Gln Asp Leu Leu Ser Lys Leu Arg Thr Phe Lys Ile Asp Gly Asp Ile Ile
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Figure 15

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CGC ACT TAT TCA GGC CCT ATT GTA ACC ACT TTT GAA TTC CGC CCA GCC CCT AAC GTT AAG GTG AGT
Arg Thr Tyr Ser Gly Pro Ile Val Thr Thr Phe Glu Phe Arg Pro Ala Pro Asn Val Lys Val Ser

CGT ATT TTA GGC TTG AGC GAT GAT TTA GCG ATG ACT TTA TGC GCT GAA TCC ATC CGC ATT CAA GCC
Arg Ile Leu Gly Leu Ser Asp Asp Leu Ala Met Thr Leu Cys Ala Glu Ser Ile Arg Ile Gln Ala

CCT ATT AAG GGT AAA GAT GTC GTT GGC ATT GAA ATC CCT AAC AGC CAA AGC CAA ATT ATT TAT TTA
Pro Ile Lys Gly Lys Asp Val Val Gly Ile Glu Ile Pro Asn Ser Gln Ser Gln Ile Ile Tyr Leu

AGA GAA ATT CTA GAG AGC GAA TTG TTT CAA AAA TCC AGC TCG CCC TTA ACT CTA GCT TTA GGC AAA
Arg Glu Ile Leu Glu Ser Glu Leu Phe Gln Lys Ser Ser Ser Pro Leu Thr Leu Ala Leu Gly Lys

GAC ATT GTG GGT AAC CCT TTC ATC ACG GAT TTA AAA AAG CTC CCC CAT TTG CTC ATC GCT GGC ACG
Asp Ile Val Gly Asn Pro Phe Ile Thr Asp Leu Lys Lys Leu Pro His Leu Leu Ile Ala Gly Thr


ACA GGA AGC GGT AAG AGC GTG GGC GTG AAT GCG ATG ATT TTA TCC TTA CTT TAT AAA AAC CCT CCC
Thr Gly Ser Gly Lys Ser Val Gly Val Asn Ala Met Ile Leu Ser Leu Leu Tyr Lys Asn Pro Pro

GAT CAA CTC AAA TTA GTG ATG ATC GAT CCC AAA ATG GTA GAA TTT AGT ATT TAT GCG GAT ATC CCT
Asp Gln Leu Lys Leu Val Met Ile Asp Pro Lys Met Val Glu Phe Ser Ile Tyr Ala Asp Ile Pro

CAT TTG CTC ACG CCC ATT ATC ACC GAC CCT AAA AAA GCT ATT GGG GCT TTG CAA AGC GTG GCT AAA
His Leu Leu Thr Pro Ile Ile Thr Asp Pro Lys Lys Ala Ile Gly Ala Leu Gln Ser Val Ala Lys

GAA ATG GAA CGC CGG TAT TCT TTA ATG AGC GAA TAC AAG GTT AAA ACC ATT GAT TCT TAT AAT GAA
Glu Met Glu Arg Arg Tyr Ser Leu Met Ser Glu Tyr Lys Val Lys Thr Ile Asp Ser Tyr Asn Glu

CAA GCC CCA AGT AAC GGC GTT GAA GCG TTC CCC TAT TTG ATT GTG GTG ATT GAT GAA TTA GCG GAT
Gln Ala Pro Ser Asn Gly Val Glu Ala Phe Pro Tyr Leu Ile Val Val Ile Asp Glu Leu Ala Asp

TTA ATG ATG ACA GGG GGC AAA GAA GCG GAG TTT CCT ATC GCT AGA ATC GCT CAA ATG GGG CGC GCG
Leu Met Met Thr Gly Gly Lys Glu Ala Glu Phe Pro Ile Ala Arg Ile Ala Gln Met Gly Arg Ala

AGC GGC TTA CAC CTC ATT GTA GCG ACC CAA CGC CCA AGC GTG GAT GTC GTA ACC GGC TTG ATT AAA
Ser Gly Leu His Leu Ile Val Ala Thr Gln Arg Pro Ser Val Asp Val Val Thr Gly Leu Ile Lys

ACC AAC TTG CCT TCA AGG GTG AGT TTT AGG GTA GGC ACT AAG ATT GAT TCT AAA GTG ATT TTA GAC
Thr Asn Leu Pro Ser Arg Val Ser Phe Arg Val Gly Thr Lys Ile Asp Ser Lys Val Ile Leu Asp

ACT GAT GGG GCG CAA AGC TTG TTA GGA AGA GGC GAT ATG CTC TTT ACC CCC CCA GGA GCG AAC GGG
Thr Asp Gly Ala Gln Ser Leu Leu Gly Arg Gly Asp Met Leu Phe Thr Pro Pro Gly Ala Asn Gly

TTA GTG CGC TTG CAT GCC CCC TTT GCC ACT GAA GAT GAA ATC AAA AAA ATC GTG GAT TTT ATT AAA
Leu Val Arg Leu His Ala Pro Phe Ala Thr Glu Asp Glu Ile Lys Lys Ile Val Asp Phe Ile Lys

GCC CAA AAA GAA GTA CAA TAC GAT AAA GAT TTC TTG CTA GAA GAA TCA CGC ATG CCT TTA GAC ACC
Ala Gln Lys Glu Val Gln Tyr Asp Lys Asp Phe Leu Leu Glu Glu Ser Arg Met Pro Leu Asp Thr

CCT AAT TAT CAA GGC GAT GAC ATT TTA GAA AGG GCT AAA GCG GTG ATT TTA GAA AAA AAG ATC ACT
Pro Asn Tyr Gln Gly Asp Asp Ile Leu Glu Arg Ala Lys Ala Val Ile Leu Glu Lys Lys Ile Thr

TCT ACG AGT TTT TTA CAA CGC CAA TTA AAA ATC GGC TAC AAC CAA GCC GCT ACC ATT ACT GAC GAA
Ser Thr Ser Phe Leu Gln Arg Gln Leu Lys Ile Gly Tyr Asn Gln Ala Ala Thr Ile Thr Asp Glu

TTA GAA GCT CAA GGC TTT TTA TCC CCA AGA AAC GCT AAA GGC AAC AGA GAG ATT TTG CAA AAC TTT
Leu Glu Ala Gln Gly Phe Leu Ser Pro Arg Asn Ala Lys Gly Asn Arg Glu Ile Leu Gln Asn Phe

TAA
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HPN091

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ATG GGT AAT CAT TTT TCT AAA TTA GGA TTT GTT TTA GCC GCA TTA GGA AGC GCG ATA GGT TTA GGG
Met Gly Asn His Phe Ser Lys Leu Gly Phe Val Leu Ala Ala Leu Gly Ser Ala Ile Gly Leu Gly

CAT ATC TGG CGT TTC CCC TAC ATG ACT GGG GTG AGT GGT GGG GGT GCT TTT GTT TTA TTG TTT TTA
His Ile Trp Arg Phe Pro Tyr Met Thr Gly Val Ser Gly Gly Gly Ala Phe Val Leu Leu Phe Leu

TTT TTA TCT TTA AGC GTT GGC GCG GCG ATG TTT ATC GCT GAA ATG CTA TTA GGA CAA AGC ACT CAA
Phe Leu Ser Leu Ser Val Gly Ala Ala Met Phe Ile Ala Glu Met Leu Leu Gly Gln Ser Thr Gln

AAA AAT GTA ACA GAA GCT TTT AAA GAG CTT GAC ATT AAC CCC AAA AAA CGC TGG AAA TAC GCA GGG
Lys Asn Val Thr Glu Ala Phe Lys Glu Leu Asp Ile Asn Pro Lys Lys Arg Trp Lys Tyr Ala Gly
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Figure 15

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CTT TTG CTT GTT TCT GGG CCA TTA ATA CTG ACT TTT TAC GGC ACG ATT TTA GGT TGG GTG CTT TAT
Leu Leu Leu Val Ser Gly Pro Leu Ile Leu Thr Phe Tyr Gly Thr Ile Leu Gly Trp Val Leu Tyr

TAT TTG GTG AGT GTT AGT TTT AAT TTG CCT AAC AAT ATC CAA GAA TCT GAA CAA ATT TTT ACT CAA
Tyr Leu Val Ser Val Ser Phe Asn Leu Pro Asn Asn Ile Gln Glu Ser Glu Gln Ile Phe Thr Gln

ACT TTG CAG TCT ATA GGG CTA CAA TCC ATA GGG CTT TTT AGC GTT TTA TTG ATA ACC GGA TGG ATT
Thr Leu Gln Ser Ile Gly Leu Gln Ser Ile Gly Leu Phe Ser Val Leu Leu Ile Thr Gly Trp Ile

GTT TCT AGG GGG ATT AAA GAA GGC ATT GAA AAG CTC AAT TTG GTT TTA ATG CCC TTA CTC TTT GCT
Val Ser Arg Gly Ile Lys Glu Gly Ile Glu Lys Leu Asn Leu Val Leu Met Pro Leu Leu Phe Ala

ACT TTT TTT GGT TTG CTT TTC TAT GCG ATG AGC ATG GAT TCT TTT TCT AAA GCT TTT CAT TTC ATG
Thr Phe Phe Gly Leu Leu Phe Tyr Ala Met Ser Met Asp Ser Phe Ser Lys Ala Phe His Phe Met

TTT GAT TTC AAA CCA AAA GAT TTG ACC TCT CAA GTG TTC ACT TAT TCC TTG GGG CAG GTT TTC TTT
Phe Asp Phe Lys Pro Lys Asp Leu Thr Ser Gln Val Phe Thr Tyr Ser Leu Gly Gln Val Phe Phe

TCC TTA AGC ATC GGT TTA GGG ATC AAT ATC ACT TAC GCT GCG GTT ACG GAT AAA ACG CAG AAT TTG
Ser Leu Ser Ile Gly Leu Gly Ile Asn Ile Thr Tyr Ala Ala Val Thr Asp Lys Thr Gln Asn Leu

CTT AAA AGC ACT ATT TGG GTG GTT TTA TCA GGA ATT CTA ATT TCT CTT GTG GCA GGA CTT ATG ATT
Leu Lys Ser Thr Ile Trp Val Val Leu Ser Gly Ile Leu Ile Ser Leu Val Ala Gly Leu Met Ile

TTC ACT TTT GTG TTT GAA TAT GGG GCG AAT GTC TCA CAA GGC ACA GGG TTA ATC TTC ACT TCT TTA
Phe Thr Phe Val Phe Glu Tyr Gly Ala Asn Val Ser Gln Gly Thr Gly Leu Ile Phe Thr Ser Leu

CCG GTG GTT TTT GGC CAA ATG GGA GCG ATA GGC ATT CTT GTT TCG ATT CTT TTC TTG CTC GCG CTC
Pro Val Val Phe Gly Gln Met Gly Ala Ile Gly Ile Leu Val Ser Ile Leu Phe Leu Leu Ala Leu

GCT TTT GCT GGC ATC ACT TCT ACG GTG GCT TTA TTG GAG CCA AGC GTG ATG TAT CTT ACC GAA AGG
Ala Phe Ala Gly Ile Thr Ser Thr Val Ala Leu Leu Glu Pro Ser Val Met Tyr Leu Thr Glu Arg

TAT CAA TAC TCT CGT TTT AAG GTT ACT TGG GGT CTT GTA GCA CTA ATT TTT GTG GTA GGC GTG GTG
Tyr Gln Tyr Ser Arg Phe Lys Val Thr Trp Gly Leu Val Ala Leu Ile Phe Val Val Gly Val Val

TTG ATT TTC TCG CTC CAT AAG GAT TAT AAA GAT TAT CTC ACT TTC TTT GAA AAA AGT CTT TTT GAT
Leu Ile Phe Ser Leu His Lys Asp Tyr Lys Asp Tyr Leu Thr Phe Phe Glu Lys Ser Leu Phe Asp

TGG TTG GAT TTT GCA TCA AGC ACC ATT ATC ATG CCT TTA GGC GGG ATG GCA ACC TTT ATT TTT ATG
Trp Leu Asp Phe Ala Ser Ser Thr Ile Ile Met Pro Leu Gly Gly Met Ala Thr Phe Ile Phe Met

GGT TGG GTT TTG AAA AAA GAA AAA TTG CGT CTT TTG AGC GTG CAC TTT TTA GGC CCT AAA TTG TTT
Gly Trp Val Leu Lys Lys Glu Lys Leu Arg Leu Leu Ser Val His Phe Leu Gly Pro Lys Leu Phe

GCA ACT TGG TAT TTC TTG CTT AAA TAT ATC ACC CCT TTA ATT GTG TTT TCC ATT TGG TTG AGC AAG
Ala Thr Trp Tyr Phe Leu Leu Lys Tyr Ile Thr Pro Leu Ile Val Phe Ser Ile Trp Leu Ser Lys

ATT TAT TAA
Ile Tyr ---
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HPN132

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GTG GTC TTT AAA ATT TTA GGT TTA TGG TTA GGG GTG TTT TGT TTC CTT GAG GCT ACG CCT TAT TTA
Met Val Phe Lys Ile Leu Gly Leu Trp Leu Gly Val Phe Cys Phe Leu Glu Ala Thr Pro Tyr Leu

TAC TTG GGC GAA GAG CCT AAA TAT AAA GAC AAT TTC ACG CAT TTT GAA TAC GCT AAC CCT AAC GCT
Tyr Leu Gly Glu Glu Pro Lys Tyr Lys Asp Asn Phe Thr His Phe Glu Tyr Ala Asn Pro Asn Ala

AAA AAG GGC GGT GTT TTA AGG AAT GAC GCC ATA GGG ACT TTT GAT AGC CTT AAC CCT TTC GCG CTT
Lys Lys Gly Gly Val Leu Arg Asn Asp Ala Ile Gly Thr Phe Asp Ser Leu Asn Pro Phe Ala Leu

AAA GGC ACT AAA GCT GAA GGC TTG GAT CTG ATT TAT GAC ACT TTA ATG GTG CAA AGT TTA GAC GAA
Lys Gly Thr Lys Ala Glu Gly Leu Asp Leu Ile Tyr Asp Thr Leu Met Val Gln Ser Leu Asp Glu

CCT TTT GCC GAA TAC CCC TTG ATC GCT AAA GAC GCA GAA GTG GCT AAG GAT AAC AGC TAT GTG ATT
Pro Phe Ala Glu Tyr Pro Leu Ile Ala Lys Asp Ala Glu Val Ala Lys Asp Asn Ser Tyr Val Ile

TTT ACG ATA GAT AAA AGA GCG AGA TTT AGC AAT AAC GCT CCC ATT TTA GCG AGC GAC GTG AAG TTT
Phe Thr Ile Asp Lys Arg Ala Arg Phe Ser Asn Asn Ala Pro Ile Leu Ala Ser Asp Val Lys Phe

AGT TTT GAT ACG ATC ATG AAA TTA GGA TCG CCT ATT TAT AGG CAG TAT TAC CAA GAT GTT AAA AAG
Ser Phe Asp Thr Ile Met Lys Leu Gly Ser Pro Ile Tyr Arg Gln Tyr Tyr Gln Asp Val Lys Lys
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Figure 15

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GCG GTT GTT TTA GAC AAA CAC CAT GTT AAA TTC ATT TTC AAA ACC ACT GAA AAT AAA GAG TTG CCT
Ala Val Val Leu Asp Lys His His Val Lys Phe Ile Phe Lys Thr Thr Glu Asn Lys Glu Leu Pro

CTC ATT TTA GGG CAG TTG CAG ATC TTT TCC AAA AAA GCG TTT CAA GAG GAT TAT TTT GAA AAA AAC
Leu Ile Leu Gly Gln Leu Gln Ile Phe Ser Lys Lys Ala Phe Gln Glu Asp Tyr Phe Glu Lys Asn

CCC TTA CTC ATT CCT GTT TCT AGC GGC CCT TAT GTG ATC GCT TCT TTT GAT GTG GGC AAG AAA ATC
Pro Leu Leu Ile Pro Val Ser Ser Gly Pro Tyr Val Ile Ala Ser Phe Asp Val Gly Lys Lys Ile

ACC TAC CAA AGA AAC CCT AAT TAT TGG GCG AGG AAT TTG CCT AGC AGA AAG GGG CAA TTC AAT TTT
Thr Tyr Gln Arg Asn Pro Asn Tyr Trp Ala Arg Asn Leu Pro Ser Arg Lys Gly Gln Phe Asn Phe

GAT CAA ATC AAA TTT GAG TAT TAC AAA GAC GAA ACC ATC GCC TTA CAG GCT TTT TTA AGT GGG GCG
Asp Gln Ile Lys Phe Glu Tyr Tyr Lys Asp Glu Thr Ile Ala Leu Gln Ala Phe Leu Ser Gly Ala

TAT GAT TGG CGT CTT GAA AGC ACG GCT AAG GTT TGG GCT AGG GGC TAT GTG GGG AAA GCT ATG GAC
Tyr Asp Trp Arg Leu Glu Ser Thr Ala Lys Val Trp Ala Arg Gly Tyr Val Gly Lys Ala Met Asp

AAT AAA GAG ATT ACG AAA TAT TTG ATA GCC CAC AAA ATG CCA AGC GGC ATG CAA GGG TTT TTC TTC
Asn Lys Glu Ile Thr Lys Tyr Leu Ile Ala His Lys Met Pro Ser Gly Met Gln Gly Phe Phe Phe

AAC ACG CGC CGA GAA ATT TTC AAG GAT AAA AGG GTG CGT GAA GCC TTA TTT TAT GCG TTT GAT TTT
Asn Thr Arg Arg Glu Ile Phe Lys Asp Lys Arg Val Arg Glu Ala Leu Phe Tyr Ala Phe Asp Phe

GAA TGG GCG AAT AAA AAT TTG TTT TTT TCG CAA TAC AAG CGC ACC ACC AGT TTT TTC AGT AAC TCT
Glu Trp Ala Asn Lys Asn Leu Phe Phe Ser Gln Tyr Lys Arg Thr Thr Ser Phe Phe Ser Asn Ser

ATC TAT GCG TCC CCT CCC CTC CCA AGC CCT GAA GAA AAA GCC TTG CTA GCC CCT TAT GAA AAG AGT
Ile Tyr Ala Ser Pro Pro Leu Pro Ser Pro Glu Glu Lys Ala Leu Leu Ala Pro Tyr Glu Lys Ser

TTG GAT GAA AGG GTT TTT AAA GAG CCT TAT GTC GTG CCT AGA ACC GAT GGA GTT GAT GTT TTA GGC
Leu Asp Glu Arg Val Phe Lys Glu Pro Tyr Val Val Pro Arg Thr Asp Gly Val Asp Val Leu Gly

TAT AAT TTG AGG GAA AAT TTA AAA TAC GCC CAA AAG CTT TTA GAG AGC ACG GGC TTT TCT TAC AAA
Tyr Asn Leu Arg Glu Asn Leu Lys Tyr Ala Gln Lys Leu Leu Glu Ser Thr Gly Phe Ser Tyr Lys

AAC ATG CGT TTG GTG GAT AAG AAT AAC AAG CCT TTC AGT TTC ACT TTG CTT TTA AAT AGC CCG GCA
Asn Met Arg Leu Val Asp Lys Asn Asn Lys Pro Phe Ser Phe Thr Leu Leu Leu Asn Ser Pro Ala

TTT GAA AGA CTG GCC CTA GCT TTT GCT AAA AAC TTA AGG GTG TTA GGG ATT GAA ATG AAA ATC CAA
Phe Glu Arg Leu Ala Leu Ala Phe Ala Lys Asn Leu Arg Val Leu Gly Ile Glu Met Lys Ile Gln

AGA GTG GAT TTA AGC CAG TAT GTC AAT CGG ATC AAA AGC TAT GAT TTT GAC ATG ATT GTA GGA GTG
Arg Val Asp Leu Ser Gln Tyr Val Asn Arg Ile Lys Ser Tyr Asp Phe Asp Met Ile Val Gly Val

ATT GGC CAA TCG TCT TTC CCA GGT AAT GAG CAG CGC TTT TAT TTT GGT TCT TTG AGT GCG AAA GAA
Ile Gly Gln Ser Ser Phe Pro Gly Asn Glu Gln Arg Phe Tyr Phe Gly Ser Leu Ser Ala Lys Glu

AAA GGC ACA AGG AAT TAT GCG GGA ATC TCT AGT AAA GCG GTA GAT GAT TTG ATT GAA AAA ATC ATT
Lys Gly Thr Arg Asn Tyr Ala Gly Ile Ser Ser Lys Ala Val Asp Asp Leu Ile Glu Lys Ile Ile

AAC GCT AAA GAT TAC AAG GAA CAA TTG GCC GCC ATT CAA GCG ATG GAT AGG GTA TTG TTG TGG GGG
Asn Ala Lys Asp Tyr Lys Glu Gln Leu Ala Ala Ile Gln Ala Met Asp Arg Val Leu Leu Trp Gly


TTT TAT GTG ATA CCG CAT TTT TAT TTG CCT AAT TAC AGG ATC GCA GCG TAT AAT TAC ATT GGC ATG
Phe Tyr Val Ile Pro His Phe Tyr Leu Pro Asn Tyr Arg Ile Ala Ala Tyr Asn Tyr Ile Gly Met

CCT GAA ATC AGC CCT AGC TAT GGA TTT TCG CCG TAT TTG TGG TGG ATA AAA GAA AAG GAT CTT CAA
Pro Glu Ile Ser Pro Ser Tyr Gly Phe Ser Pro Tyr Leu Trp Trp Ile Lys Glu Lys Asp Leu Gln

TGA
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HPN137

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ATG AAA AAT CAA CAC AAA AAT CCC CTA ACA AAA GCT TTA ATG AAA ACT TAT CCA TAT AAC CAT TTT
Met Lys Asn Gln His Lys Asn Pro Leu Thr Lys Ala Leu Met Lys Thr Tyr Pro Tyr Asn His Phe

TTA TTT TTC TGC TTT ATT CTA GGA GCG TTT TTA TTA GGT TTG CTC AGT CCA GCT TAT GCT TTA AGT
Leu Phe Phe Cys Phe Ile Leu Gly Ala Phe Leu Leu Gly Leu Leu Ser Pro Ala Tyr Ala Leu Ser

ATT ATC ACC ACT AAA GAA ATT GAC GCT AAT TTG CTT AAT GGA GCG ATA GAA AGC AGG GTG GTG TTA
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Figure 15

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Ile Ile Thr Thr Lys Glu Ile Asp Ala Asn Leu Leu Asn Gly Ala Ile Glu Ser Arg Val Val Leu

GGC AAG AGG GTG TTT AAA GTA GAA GCT CAT GGG TTT TAT TTT AGA AAC AAT GCG ACT AAC AGC ATA
Gly Lys Arg Val Phe Lys Val Glu Ala His Gly Phe Tyr Phe Arg Asn Asn Ala Thr Asn Ser Ile

GAT ATA GAA ATC ACC AGT CTT TTA AGA GAC AAT CAA TCG TTT CCT TTG ACT AGC AGT GCT AAA ACC
Asp Ile Glu Ile Thr Ser Leu Leu Arg Asp Asn Gln Ser Phe Pro Leu Thr Ser Ser Ala Lys Thr

AGT TTA AAA ATA CCT CCT AAC GCC AAG ATT AAA AAA TCC ACT ATC CTT GTT TTG AAA GGC GAG AAC
Ser Leu Lys Ile Pro Pro Asn Ala Lys Ile Lys Lys Ser Thr Ile Leu Val Leu Lys Gly Glu Asn

GCT GAA GAA GTG GCT AAG ATT TTA GGC GTT AGC AAA GAA GAA TAC CAA AAG CTA GAA AAC ATC GCT
Ala Glu Glu Val Ala Lys Ile Leu Gly Val Ser Lys Glu Glu Tyr Gln Lys Leu Glu Asn Ile Ala

CAA ACC AAA GCG GCT AAT GAC CCT ATG TAT GCT AAC ACG CCT TTT AGT AAT GGT TCT GAT AGT TCC
Gln Thr Lys Ala Ala Asn Asp Pro Met Tyr Ala Asn Thr Pro Phe Ser Asn Gly Ser Asp Ser Ser

TTT TAC GAT AAC AAT CCT AAT AGC CCT AGC AAT AAC GCT ATC AAT GGC AAA GAT GGC GCA AAT GGG
Phe Tyr Asp Asn Asn Pro Asn Ser Pro Ser Asn Asn Ala Ile Asn Gly Lys Asp Gly Ala Asn Gly

AGT AAC GGC TAT GGG GCA AAT GGC AAT GAT GGG GTA AAT GGG ATC AGT GGG AGT AAT GGT GCA AAT
Ser Asn Gly Tyr Gly Ala Asn Gly Asn Asp Gly Val Asn Gly Ile Ser Gly Ser Asn Gly Ala Asn

GGG AGT CAT TCA AAT AAT AAT GCA ATA GGC AGT GGT ATT GAT ACA GAT GGC GTG TTA GGG GTG GAT
Gly Ser His Ser Asn Asn Asn Ala Ile Gly Ser Gly Ile Asp Thr Asp Gly Val Leu Gly Val Asp

GGG GTG AAT GGC TCT AGT TCT TCA AGT GGC GGC TCT GTA GGG GGT TAT GAG AAT AAT TTC ACT AAT
Gly Val Asn Gly Ser Ser Ser Ser Ser Gly Gly Ser Val Gly Gly Tyr Glu Asn Asn Phe Thr Asn

CAT GGC TCT ACT AAC AAT AAC ACA GGA GGG TAT GAC AAT TTT AAT AAT GGC AGC TCA AGT GGT GGG
His Gly Ser Thr Asn Asn Asn Thr Gly Gly Tyr Asp Asn Phe Asn Asn Gly Ser Ser Ser Gly Gly

AGT TTA GGG AAT GGG GGG CTT TTC CCT ATT CCT TTT GGT AAT GGA GAC ACA AAC AAT TCC AAT AAT
Ser Leu Gly Asn Gly Gly Leu Phe Pro Ile Pro Phe Gly Asn Gly Asp Thr Asn Asn Ser Asn Asn

TCC ACT AAC ACC ACT AGC CCA ACT AAT GGC AGT AGT TCT AAT AAC GCC ACT AAT CCT AGT TCG CAA
Ser Thr Asn Thr Thr Ser Pro Thr Asn Gly Ser Ser Ser Asn Asn Ala Thr Asn Pro Ser Ser Gln

GAA AAC AAT TAC TCC AGC CAG TAT TGT AAA GTG CCA GAG TTA AGC CCC AAC AAC ACG ATG AAA CTA
Glu Asn Asn Tyr Ser Ser Gln Tyr Cys Lys Val Pro Glu Leu Ser Pro Asn Asn Thr Met Lys Leu

GAT GTT ATC GCT AAA GAT GGC TCT TGT ATT TCT ATG AAC GCT TTA AGA GAT GAC ACT AAA TGC GCT
Asp Val Ile Ala Lys Asp Gly Ser Cys Ile Ser Met Asn Ala Leu Arg Asp Asp Thr Lys Cys Ala

TAT AGA TAC GAT TTT GAA GCC GGT AAA GCC ATC AAG CAA ACG CAA TAC TAC TAT GTA GAT AGG GAA
Tyr Arg Tyr Asp Phe Glu Ala Gly Lys Ala Ile Lys Gln Thr Gln Tyr Tyr Tyr Val Asp Arg Glu

AAT AAA ACG CAA AAT ATC GGT GGT TGT GTG GAT TTA CAA GGC GCT CAA TAC GCC ATG CAA CTT TAC
Asn Lys Thr Gln Asn Ile Gly Gly Cys Val Asp Leu Gln Gly Ala Gln Tyr Ala Met Gln Leu Tyr

AAA GAT GAC AGC AAA TGC GCC TTA CAA ACC ACG AGC GAT AAA GGT TAT GGT ATG GGG AAA ACG CAA
Lys Asp Asp Ser Lys Cys Ala Leu Gln Thr Thr Ser Asp Lys Gly Tyr Gly Met Gly Lys Thr Gln

ACC TTT CAA ACT GAA ATC GTG TTT CGT GGG ATG GAC AAT TTA ATC CAT GTC GCT GTG CCT TGC AGC
Thr Phe Gln Thr Glu Ile Val Phe Arg Gly Met Asp Asn Leu Ile His Val Ala Val Pro Cys Ser

GAT TAT GCA AGG GTG CAA GAC AGG ATT GTT AGG TAT GAA AAA AAT GAT AAA ACC CAA ACC TTA ACG
Asp Tyr Ala Arg Val Gln Asp Arg Ile Val Arg Tyr Glu Lys Asn Asp Lys Thr Gln Thr Leu Thr

CCT ATA GTG GAT CAG TAT TAT AAT GAT CCT AAC AAC CCT AAC AAG CAA GAG ATT TTA AAT CGT GGG
Pro Ile Val Asp Gln Tyr Tyr Asn Asp Pro Asn Asn Pro Asn Lys Gln Glu Ile Leu Asn Arg Gly

ATT GCC ACC CAA TTA AGC TCG CAA TAT CAA GAA TTT GCA TGC GGT CAA TGG GAA TAC AAT GAC GCT
Ile Ala Thr Gln Leu Ser Ser Gln Tyr Gln Glu Phe Ala Cys Gly Gln Trp Glu Tyr Asn Asp Ala

AAA TTA GAA GCC AAA AGA CCT ACA ATG CTA AAA AGC TAT AAC AAG CTT AAT GGA GAA TGG GTA GAA
Lys Leu Glu Ala Lys Arg Pro Thr Met Leu Lys Ser Tyr Asn Lys Leu Asn Gly Glu Trp Val Glu


GTT ACG CCC TGT AAT TTT GAA GCA GGG ATT AAA AGC GGT GCG GTT GTT AGC CCT TAT GTG ATG GGC
Val Thr Pro Cys Asn Phe Glu Ala Gly Ile Lys Ser Gly Ala Val Val Ser Pro Tyr Val Met Gly

GTG CCT AGT TCT AAA GTC TTA AGC GAT ATT ACT ACA AGC CAT TAT TTT AGG ATA GAA AGG AAA AAT
Val Pro Ser Ser Lys Val Leu Ser Asp Ile Thr Thr Ser His Tyr Phe Arg Ile Glu Arg Lys Asn
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Figure 15

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TAT GGT GAG AGA GAA CAA TGC CAA AAA CTT TAT GGA GTC AAT CGT TGC CAA CCG CAA TAT TCC ATA
Tyr Gly Glu Arg Glu Gln Cys Gln Lys Leu Tyr Gly Val Asn Arg Cys Gln Pro Gln Tyr Ser Ile

CTG ATC CTA GTA TCA CCG ATT GGA GCG CCA CTT ACA AAA CCA CTA CCA CCC AAA CCA CTC AAC CTT
Leu Ile Leu Val Ser Pro Ile Gly Ala Pro Leu Thr Lys Pro Leu Pro Pro Lys Pro Leu Asn Leu

ATT TAC GCC CAG CCC AAG ATA ATG AAA AAC ACC CCA CAA CCT ATA ATC TTA TCA CCA CTC AAA CCA
Ile Tyr Ala Gln Pro Lys Ile Met Lys Asn Thr Pro Gln Pro Ile Ile Leu Ser Pro Leu Lys Pro

CCA TCA ACA GGA CTC AAA GCG TTT TGA
Pro Ser Thr Gly Leu Lys Ala Phe ---
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HPN172

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ATG TTG GGG AGC GTC AAA AAA GCG GTT TTT AGG GTT TTG TGT TTG GGG GCG TTG TGT TTA TGC GGG
Met Leu Gly Ser Val Lys Lys Ala Val Phe Arg Val Leu Cys Leu Gly Ala Leu Cys Leu Cys Gly

GGG TTA ATG GCA GAG CAA GAT CCT AAA GAG CTT ATA TTT TCA GGT ATA ACT ATT TAC ACG GAT AAA
Gly Leu Met Ala Glu Gln Asp Pro Lys Glu Leu Ile Phe Ser Gly Ile Thr Ile Tyr Thr Asp Lys

AAT TTC ACT AGA GCT AAG AAA TAT TTT GAA AAA GCT TGC AAA TCA AAC GAT GCT GAT GGC TGT GCA
Asn Phe Thr Arg Ala Lys Lys Tyr Phe Glu Lys Ala Cys Lys Ser Asn Asp Ala Asp Gly Cys Ala

ATC TTA AGA GAG GTT TAT TCT AGT GGT AAA GCC ATA GCG AGA GAA AAC GCA AGA GAG AGC ATT GAA
Ile Leu Arg Glu Val Tyr Ser Ser Gly Lys Ala Ile Ala Arg Glu Asn Ala Arg Glu Ser Ile Glu

AAA GCT CTT GAA CAC ACC GCT ACT GCT AAA GTT TGT AAA TTA AAC GAT GCT GAA AAA TGC AAG GAC
Lys Ala Leu Glu His Thr Ala Thr Ala Lys Val Cys Lys Leu Asn Asp Ala Glu Lys Cys Lys Asp

TTA GCA GAG TTT TAT TTT AAT GTA AAC GAT CTT AAA AAT GCT TTA GAA TAT TAC TCT AAA TCT TGT
Leu Ala Glu Phe Tyr Phe Asn Val Asn Asp Leu Lys Asn Ala Leu Glu Tyr Tyr Ser Lys Ser Cys

AAG TTA AAT AAT GTT GAA GGG TGT ATG CTG TCA GCA ACT TTT TAT AAC GAT ATG ATA AAG GGT TTG
Lys Leu Asn Asn Val Glu Gly Cys Met Leu Ser Ala Thr Phe Tyr Asn Asp Met Ile Lys Gly Leu

AAA AAA GAT AAA AAA GAT CTA GAA TAT TAT TCT AAA GCT TGC GAG TTA AAT AAC GGT GGA GGG TGT
Lys Lys Asp Lys Lys Asp Leu Glu Tyr Tyr Ser Lys Ala Cys Glu Leu Asn Asn Gly Gly Gly Cys

TCT AAA TTA GGA GGG GAT TAT TTT TTT GGT GAA GGC GTA ACA AAA GAT TTC AAA AAA GCT TTT GAA
Ser Lys Leu Gly Gly Asp Tyr Phe Phe Gly Glu Gly Val Thr Lys Asp Phe Lys Lys Ala Phe Glu

TAT TCT GCC AAA GCT TGT GAG TTG AAC GAT GCT AAA GGG TGT TAC GCT CTA GCA GCG TTT TAT AAT
Tyr Ser Ala Lys Ala Cys Glu Leu Asn Asp Ala Lys Gly Cys Tyr Ala Leu Ala Ala Phe Tyr Asn

GAG GGT AAA GGC GTG GCA AAG GAT GAA AAG CAA ACG ACA GAA AAC CTT GAA AAG AGT TGC AAG CTA
Glu Gly Lys Gly Val Ala Lys Asp Glu Lys Gln Thr Thr Glu Asn Leu Glu Lys Ser Cys Lys Leu

GGA TTA AAA GAA GCA TGC GAT ATT CTC AAA GAA CAA AAA CAA TAA
Gly Leu Lys Glu Ala Cys Asp Ile Leu Lys Glu Gln Lys Gln ---
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HPC004

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ATG AAT AAA AAC AAC AAC ACG AAT CTT ATT TTA GCG ATC GCT CTG TCT TTC TTG TTT ATC GCT CTT
Met Asn Lys Asn Asn Asn Thr Asn Leu Ile Leu Ala Ile Ala Leu Ser Phe Leu Phe Ile Ala Leu

TAT AGC TAT TTT TTC CAA AAA CCA AAC AAA ACA ACA ACC CAA ACC ACA AAG CAA GAA ACA GCC AAC
Tyr Ser Tyr Phe Phe Gln Lys Pro Asn Lys Thr Thr Thr Gln Thr Thr Lys Gln Glu Thr Ala Asn

AAC CAC ACA GCA ACA AGT CCT AAC GCG CCC AAC GCC CAA AAT TTT AGC GTT ACT CAA ACC ATC CCC
Asn His Thr Ala Thr Ser Pro Asn Ala Pro Asn Ala Gln Asn Phe Ser Val Thr Gln Thr Ile Pro

CAA GAG AGT TTG TTA AGC ACG ATT TCT TTT GAG CAT GCC AGG ATT GAA ATT GAT TCT TTA GGG CGC
Gln Glu Ser Leu Leu Ser Thr Ile Ser Phe Glu His Ala Arg Ile Glu Ile Asp Ser Leu Gly Arg

ATC AAA CAG GTT TAT CTC AAG GAT AAA AAG TAT CTA ACC CCT AAA CAA AAG GGC TTT TTA GAG CAT
Ile Lys Gln Val Tyr Leu Lys Asp Lys Lys Tyr Leu Thr Pro Lys Gln Lys Gly Phe Leu Glu His

GTG AGC CAT CTT TTT AAC CCC AAA GCT AAC CCG CAA CCC CCC CTA AAA GAG CTC CCC CTT TTA GCG
Val Ser His Leu Phe Asn Pro Lys Ala Asn Pro Gln Pro Pro Leu Lys Glu Leu Pro Leu Leu Ala

GCC GAT AAA CTC AAG CCT TTA GAA GTG CGT TTT TTA GAC CCC ACG CTC AAT AAC AAA GCG TTC AAC
Ala Asp Lys Leu Lys Pro Leu Glu Val Arg Phe Leu Asp Pro Thr Leu Asn Asn Lys Ala Phe Asn
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Figure 15

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ACC CCT TAT AGT GCT TCA AAA ACC ACT CTT GGG CCT AAT GAA CAG CTT GTT TTA ACC CAA GAT TTA
Thr Pro Tyr Ser Ala Ser Lys Thr Thr Leu Gly Pro Asn Glu Gln Leu Val Leu Thr Gln Asp Leu

GGC GCT CTT ACC ATC ATT AAA ACC CTG ACT TTT TAT GAT GAT TTG CAT TAT GAT TTA AAA ATC GCC
Gly Ala Leu Thr Ile Ile Lys Thr Leu Thr Phe Tyr Asp Asp Leu His Tyr Asp Leu Lys Ile Ala

TTC AAA TCG CCT AAC AAT ATT ATC CCT AGC TAT GTG ATC ACT AAT GGT TAC AGA CCG GTG GCT GAT
Phe Lys Ser Pro Asn Asn Ile Ile Pro Ser Tyr Val Ile Thr Asn Gly Tyr Arg Pro Val Ala Asp

TTG GAC AGC TAC ACC TTT TCG GGC GTG CTT TTA GAA AAC AAC GAC AAA AAA ATT GAA AAA ATT GAA
Leu Asp Ser Tyr Thr Phe Ser Gly Val Leu Leu Glu Asn Asn Asp Lys Lys Ile Glu Lys Ile Glu

GAT AAA GAC GCT AAA GAA ATC AAA CGC TTT TCT AAC ACC CTC TTT TTA TCC AGC GTG GAT AGG TAT
Asp Lys Asp Ala Lys Glu Ile Lys Arg Phe Ser Asn Thr Leu Phe Leu Ser Ser Val Asp Arg Tyr

TTC ACC ACT TTG CTT TTC ACT AAA GAT TCT CAA GGT TTT GAA GCC TTA ATT GAT TCA GAA ATC GGC
Phe Thr Thr Leu Leu Phe Thr Lys Asp Ser Gln Gly Phe Glu Ala Leu Ile Asp Ser Glu Ile Gly

ACT AAA AAA CCC TTA GGG TTC ATT TCC CTT AAA AAT GAA GCG AAT TTG CAT GGT TAT ATT GGC CCT
Thr Lys Lys Pro Leu Gly Phe Ile Ser Leu Lys Asn Glu Ala Asn Leu His Gly Tyr Ile Gly Pro

AAA GAT TAC CGC TCT TTG AAA GCG ATT TCA CCC ATG CTC ACT GAT GTG ATA GAG TAT GGT TTA ATC
Lys Asp Tyr Arg Ser Leu Lys Ala Ile Ser Pro Met Leu Thr Asp Val Ile Glu Tyr Gly Leu Ile

ACT TTC TTT GCG AAA GGC GTG TTT GTT TTA CTG GAT TAT TTG TAT CAA TTC GTG GGC AAT TGG GGT
Thr Phe Phe Ala Lys Gly Val Phe Val Leu Leu Asp Tyr Leu Tyr Gln Phe Val Gly Asn Trp Gly

TGG GCT ATC ATT TTT TTA ACG ATT ATC GTG CGC CTA ATC CTT TAC CCC TTA AGC TAT AAA GGC ATG
Trp Ala Ile Ile Phe Leu Thr Ile Ile Val Arg Leu Ile Leu Tyr Pro Leu Ser Tyr Lys Gly Met

GTG AGC ATG CAA AAG CTC AAA GAA TTA GCC CCC AAA ATG AAA GAA CTC CAA GAA AAA TAC AAG GGC
Val Ser Met Gln Lys Leu Lys Glu Leu Ala Pro Lys Met Lys Glu Leu Gln Glu Lys Tyr Lys Gly

GAA CCC CAA AAG TTG CAA GCC CAC ATG ATG CAG CTT TAC AAA AAA CAT GGG GCC AAC CCG CTA GGG
Glu Pro Gln Lys Leu Gln Ala His Met Met Gln Leu Tyr Lys Lys His Gly Ala Asn Pro Leu Gly

GGT TGT CTG CCC TTA ATC TTA CAA ATC CCG GTG TTT TTT GCG ATT TAT AGA GTG CTT TAT AAC GCT
Gly Cys Leu Pro Leu Ile Leu Gln Ile Pro Val Phe Phe Ala Ile Tyr Arg Val Leu Tyr Asn Ala

GTG GAA TTG AAA AGC TCA GAG TGG ATC TTA TGG ATT CAT GAT TTA TCC ATC ATG GAT CCG TAT TTT
Val Glu Leu Lys Ser Ser Glu Trp Ile Leu Trp Ile His Asp Leu Ser Ile Met Asp Pro Tyr Phe

ATT TTA CCG CTT CTT ATG GGA GCG TCT ATG TAT TGG CAC CAA AGC GTT ACG CCA AAC ACC ATG ACC
Ile Leu Pro Leu Leu Met Gly Ala Ser Met Tyr Trp His Gln Ser Val Thr Pro Asn Thr Met Thr

GAT CCC ATG CAA GCG AAG ATT TTT AAA CTC TTA CCC CTA TTA TTT ACA ATC TTT TTA ATC ACT TTC
Asp Pro Met Gln Ala Lys Ile Phe Lys Leu Leu Pro Leu Leu Phe Thr Ile Phe Leu Ile Thr Phe

CCT GCA GGG TTA GTC TTG TAT TGG ACC ACA AAC AAC ATC CTT TCG GTG TTG CAA CAA CTC ATT ATT
Pro Ala Gly Leu Val Leu Tyr Trp Thr Thr Asn Asn Ile Leu Ser Val Leu Gln Gln Leu Ile Ile

AAT AAA GTT TTA GAG AAT AAA AAA CGA GCG CAC CGC GAA AAC AAA AAG GAA CAT TGA
Asn Lys Val Leu Glu Asn Lys Lys Arg Ala His Arg Glu Asn Lys Lys Glu His ---
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HPC010

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GTG AGG CAA GAA AAG TAT TTT TTG ACT TCT TCT TTA TCG CTT TTA TCG TTT TTA TTA TGT CCT GTA
Met Arg Gln Glu Lys Tyr Phe Leu Thr Ser Ser Leu Ser Leu Leu Ser Phe Leu Leu Cys Pro Val

GAA GCT TTT GAT TAT CGG TTT AGT GGT CGT GTG GAG AAC TTT TCT AAG ATT GGT TTT AAC AAT TCT
Glu Ala Phe Asp Tyr Arg Phe Ser Gly Arg Val Glu Asn Phe Ser Lys Ile Gly Phe Asn Asn Ser

CAA ATC AAT ACT AAA AAA GGG ATT TAT CCT ACT GAA AGT TTT ATA GAT ATT GTA ACT TTA GCA CAA
Gln Ile Asn Thr Lys Lys Gly Ile Tyr Pro Thr Glu Ser Phe Ile Asp Ile Val Thr Leu Ala Gln

GTC AAA GTC AAT TTA CTC CCT AAA GGC ACC GAA AAC CAT AGG CTC TCT GTT TCT TTG GGT GGG GCG
Val Lys Val Asn Leu Leu Pro Lys Gly Thr Glu Asn His Arg Leu Ser Val Ser Leu Gly Gly Ala

ATT GCA GCC ATT CCT TAC GAT AAG ACT AAA TAT TAT ATT AAC CAG GCT AAC GGG AAG GTT TTT GGC
Ile Ala Ala Ile Pro Tyr Asp Lys Thr Lys Tyr Tyr Ile Asn Gln Ala Asn Gly Lys Val Phe Gly

TCA ATT GTG GAG AAT TTC ATT GGG GGC TAT CAT GGA TAC TTT TTT AAC AAG TAT CTT GGC CCT GCT
Ser Ile Val Glu Asn Phe Ile Gly Gly Tyr His Gly Tyr Phe Phe Asn Lys Tyr Leu Gly Pro Ala
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Figure 15

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TAT GCG GGG ACT TCT CAA TCA GCG AGC TAT CAT GCA AGG CCT TAT GTG GTG GAT ACC GCT TTT TTA
Tyr Ala Gly Thr Ser Gln Ser Ala Ser Tyr His Ala Arg Pro Tyr Val Val Asp Thr Ala Phe Leu

CGA TAC GAT TAC AAA GAT GTT TTT GGG TTT AAA GCG GGG CGC TAT GAA GCG AAT ATT GAT TTC ATG
Arg Tyr Asp Tyr Lys Asp Val Phe Gly Phe Lys Ala Gly Arg Tyr Glu Ala Asn Ile Asp Phe Met

AGC GGA TCG AAT CAA GGG TGG GAA GTG TAT TAT CAG CCC TAT AAG ACT GAG ACG CAA AGG TTA AGG
Ser Gly Ser Asn Gln Gly Trp Glu Val Tyr Tyr Gln Pro Tyr Lys Thr Glu Thr Gln Arg Leu Arg

TTT TGG TGG TGG AGT TCT TTT GGG AGA GGT TTA GCG TTT AAC TCT TGG ATT TAT GAG TTT TTC GCG
Phe Trp Trp Trp Ser Ser Phe Gly Arg Gly Leu Ala Phe Asn Ser Trp Ile Tyr Glu Phe Phe Ala

ACC GTG CCT TAT TTG AAA AAG GGA GGC AAT CCT GAT AAC AGC AAC GAT TTC ATC AAT TAT GGC TGG
Thr Val Pro Tyr Leu Lys Lys Gly Gly Asn Pro Asp Asn Ser Asn Asp Phe Ile Asn Tyr Gly Trp

CAT GGG ATC ACC ACA ACC TAT TCT TAT AAA GGT TTA GAC GCT CAA TTT TTT TAT ATT
His Gly Ile Thr Thr Thr Tyr Ser Tyr Lys Gly Leu Asp Ala Gln Phe Phe Tyr Ile
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HPC012

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ATG AAT TTT TTT AAA ATC CTT TTA ATG GAA TTA AGG GCT ATT GTT TCT CAT AAA GGC GTT TTA TTA
 Met Asn Phe Phe Lys Ile Leu Leu Met Glu Leu Arg Ala Ile Val Ser His Lys Gly Val Leu Leu

 ATC CTT ATA GGC GCT CCT TTA ATC TAT GGC TTG TTA TAC CCT TTG CCT TAT TTA AAA GAC ATC GTA
 Ile Leu Ile Gly Ala Pro Leu Ile Tyr Gly Leu Leu Tyr Pro Leu Pro Tyr Leu Lys Asp Ile Val

 ACG CAG CAA AAA ATC GCC CTT GTA GAT GAA GAC AAT TCC TTC CTT TCT AGG CAA TTA GCC TTC ATG
 Thr Gln Gln Lys Ile Ala Leu Val Asp Glu Asp Asn Ser Phe Leu Ser Arg Gln Leu Ala Phe Met

 GCG CAA AGC TCC AAC GAG TTA GAA ATC GCT TTT TTT AGC CCC TCT ATG CTG GAA GCC AAA AAG CTT
 Ala Gln Ser Ser Asn Glu Leu Glu Ile Ala Phe Phe Ser Pro Ser Met Leu Glu Ala Lys Lys Leu

 TTA AAA GAA GAA AAA ATT TAT GGG ATC TTG CAT ATC CCT TCG TAT TTT GAA GCC AAT ATC CAT AAG
 Leu Lys Glu Glu Lys Ile Tyr Gly Ile Leu His Ile Pro Ser Tyr Phe Glu Ala Asn Ile His Lys

 CAG GTG CCT GTA ACG ATA GAT TTT TAT GCG AAT TCC AAT TAC TTT TTG ATT TAT GGC ACC TTA GCG
 Gln Val Pro Val Thr Ile Asp Phe Tyr Ala Asn Ser Asn Tyr Phe Leu Ile Tyr Gly Thr Leu Ala

 AAT GCG GTG GTG GAG AGC ATC AAC GCT TTA AAT GAT GAG ATA AGA TTC AAA CGC AAC GCC CAA ATA
 Asn Ala Val Val Glu Ser Ile Asn Ala Leu Asn Asp Glu Ile Arg Phe Lys Arg Asn Ala Gln Ile

 GAA GAA GCT GAA TTA GGG ACA GAC GGG ATT AAA ATC AGG CCT ATC GCT TTG TAT AAC CCT AGT GAG
 Glu Glu Ala Glu Leu Gly Thr Asp Gly Ile Lys Ile Arg Pro Ile Ala Leu Tyr Asn Pro Ser Glu

 GGG TAT TTG AAT TAC GCG CTC TCT AGC GTG TTT ATT TTC AYY TTA CAC CAG GTG ATG CTC ATT GCA
 Gly Tyr Leu Asn Tyr Ala Leu Ser Ser Val Phe Ile Phe   ? Leu His Gln Val Met Leu Ile Ala

 AGC AGC ATG TTT ACT AGC TCT AGG CGT TTG GAA TTA GCC CTT TTA GAT AAA AAG CAA ATC GCT TTA
 Ser Ser Met Phe Thr Ser Ser Arg Arg Leu Glu Leu Ala Leu Leu Asp Lys Lys Gln Ile Ala Leu

 AGG CTG TGC GCA AGA CTC TTG GTG TTT ATG GCA GCG TTT AGC GKT TTT GTT TTG TTG TAT TTT GGG
 Arg Leu Cys Ala Arg Leu Leu Val Phe Met Ala Ala Phe Ser   ? Phe Val Leu Leu Tyr Phe Gly

 GCG CTG TTT TCT TTT TAT GGG ATC GAA CGG CAT GCG AGT GCT TTA ATG GTG TTT TTG AAT AGC TCC
 Ala Leu Phe Ser Phe Tyr Gly Ile Glu Arg His Ala Ser Ala Leu Met Val Phe Leu Asn Ser Ser

 ATA TTC ATG CTT GCA ACC TTG AGT TTG GGG TCG TTT TTA GGC GCA TGG ATC AAA AAT GAA GCC CAC
 Ile Phe Met Leu Ala Thr Leu Ser Leu Gly Ser Phe Leu Gly Ala Trp Ile Lys Asn Glu Ala His

 ACC ACT CAA ATC GTT TTG ATT TCT TCT TTG CCC TTG ATT TTT ATG ATG GGT TTT GTG TGG CCT TTT
 Thr Thr Gln Ile Val Leu Ile Ser Ser Leu Pro Leu Ile Phe Met Met Gly Phe Val Trp Pro Phe

 GAA TCC TTG CCC TCT TAT TTG CAG GTT TTC GTT CAA ATA GTG CCT GCT TAT CAT GGG ATC AGT TTG
 Glu Ser Leu Pro Ser Tyr Leu Gln Val Phe Val Gln Ile Val Pro Ala Tyr His Gly Ile Ser Leu

 TTA GGG CGA TTG AAT CAA ATG CAT GCG GAA TTT ATA GAT GTT TCT GTC CAT TTT TAT GCG CTT ATT
 Leu Gly Arg Leu Asn Gln Met His Ala Glu Phe Ile Asp Val Ser Val His Phe Tyr Ala Leu Ile

 GCG ATT TTT ATT GCG AGT TTT ATA GGG AGT GTC TTT AAA CTC AGC TCT TTA AAG AAA GCT TGT GAA
 Ala Ile Phe Ile Ala Ser Phe Ile Gly Ser Val Phe Lys Leu Ser Ser Leu Lys Lys Ala Cys Glu

 AAC GCT TAA
 Asn Ala ---
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Figure 15

HPC013

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ATG AAA GCG TTA AAG ATT TTT TTA AAA AAA TCC CTT ATT CTG TTG TTG GCG ATT GCT TTA AGC CAC
Met Lys Ala Leu Lys Ile Phe Leu Lys Lys Ser Leu Ile Leu Leu Leu Ala Ile Ala Leu Ser His

CTG AAC GCT GTG GCT ATG ATT GTG GAT AAT CCT ACG CAG AAT ATC TGG CAA CAA GCA AAA GAC GCT
Leu Asn Ala Val Ala Met Ile Val Asp Asn Pro Thr Gln Asn Ile Trp Gln Gln Ala Lys Asp Ala

ATA GAC AAG TCT CGC TTT GTT CAA CAG GTC AAT CAT TGG GCT GAC CAA ATC AAA AAA TAC CAA GAT
Ile Asp Lys Ser Arg Phe Val Gln Gln Val Asn His Trp Ala Asp Gln Ile Lys Lys Tyr Gln Asp

ATG ATA GAA AAA GCT CAA TCA ACC ATT AAC CAA CTA AAT AAA GTG AAT GAT ATT TTA CTG AAA ACC
Met Ile Glu Lys Ala Gln Ser Thr Ile Asn Gln Leu Asn Lys Val Asn Asp Ile Leu Leu Lys Thr

AAT CAG TTT ATG AAT GGT TCT ATT TTA AAT ATC CCT AAC CCT ATG GGT TTA GTA GAA AAT GCA ACT
Asn Gln Phe Met Asn Gly Ser Ile Leu Asn Ile Pro Asn Pro Met Gly Leu Val Glu Asn Ala Thr

CAA ATT GCC AAG AAT GTA AAG TCA AAC GCT CTC GCC CTA CAA GAA AGC GCT AAA AAC TAC AAT CTA
Gln Ile Ala Lys Asn Val Lys Ser Asn Ala Leu Ala Leu Gln Glu Ser Ala Lys Asn Tyr Asn Leu

GCC GAA AAA TTT TTA TTA CGA AAT ATT GCT AGC AAA TGC CCT GAA TTA GAT ATG AAT AAA ATT AAC
Ala Glu Lys Phe Leu Leu Arg Asn Ile Ala Ser Lys Cys Pro Glu Leu Asp Met Asn Lys Ile Asn

CCA AAA ACA AAA GAG ATT TTT TTC TCC GAT AAG GGA AAA GAA AAG AGT GCC GCT AGA CAA GCT TTA
Pro Lys Thr Lys Glu Ile Phe Phe Ser Asp Lys Gly Lys Glu Lys Ser Ala Ala Arg Gln Ala Leu

GAA AAT TTA GCT AAT GCA CTT GGA AAT ACA CAA ATT ACA ACC ACT CAA CAT ATA ACA ACA AGT TTA
Glu Asn Leu Ala Asn Ala Leu Gly Asn Thr Gln Ile Thr Thr Thr Gln His Ile Thr Thr Ser Leu

AGT GGT AGG GCT TTY AGC AGA CTT YAT TTG CAA AAC AAA AGA GCA AGA ACT TTT AGC AGA YAA AAA
Ser Gly Arg Ala   ? Ser Arg Leu   ? Leu Gln Asn Lys Arg Ala Arg Thr Phe Ser Arg   ? Lys

AGC AAC AAT ACC TAG
Ser Asn Asn Thr ---
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HPC024

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ATG ATG TTT TCT TCA ATG TTT GCT TCG TTA GGG ACT CGT ATC ATG CTG GTC GTG TTA GCC GCT CTT
Met Met Phe Ser Ser Met Phe Ala Ser Leu Gly Thr Arg Ile Met Leu Val Val Leu Ala Ala Leu

TTG GGT TTA GGG GGG CTT TTT ATT GGT TTT GTA AAG GTT ATG CAA AAA GAT GTG CTA GCG CAA CTC
Leu Gly Leu Gly Gly Leu Phe Ile Gly Phe Val Lys Val Met Gln Lys Asp Val Leu Ala Gln Leu

ATG GAG CAT TTA GAA ACC GGG CAA TAC AAA AAG CGT GAA AAA ACG CTC GCT TAC ATG ACA AAA CTT
Met Glu His Leu Glu Thr Gly Gln Tyr Lys Lys Arg Glu Lys Thr Leu Ala Tyr Met Thr Lys Leu

CTT GAA CAG GGC ATT CAT GAA TAT TAC AAA AGT TTT GAC AAT GCT ACT GCA AGA AAA ATG GCG TTG
Leu Glu Gln Gly Ile His Glu Tyr Tyr Lys Ser Phe Asp Asn Ala Thr Ala Arg Lys Met Ala Leu

GAT TAT TTT AAA CGC ATC AAC GAC GAT AAA GGC ATG ATT TAT ATG GTG GTG GTG GAT AAA AAC GGG
Asp Tyr Phe Lys Arg Ile Asn Asp Asp Lys Gly Met Ile Tyr Met Val Val Val Asp Lys Asn Gly

GTG GTG CTG TTT GAT CCG
Val Val Leu Phe Asp Pro
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HPC034

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ATG AAA AAA TTG GTT TTA ATC ATC TTT TTA ACG CTA ACA CTT TCA ATA TCT GCA AAA GAA GTG AAA
Met Lys Lys Leu Val Leu Ile Ile Phe Leu Thr Leu Thr Leu Ser Ile Ser Ala Lys Glu Val Lys

ATA GTG TTT TTA GAA ACT TCA GAC ATT CAT GGG CGG CTT TTT TCG TAT GAT TAT GCG ACT GGC GAG
Ile Val Phe Leu Glu Thr Ser Asp Ile His Gly Arg Leu Phe Ser Tyr Asp Tyr Ala Thr Gly Glu

CAA AAA CCC GAT AAC GGC TTG ACA AGG ATT GCG ACT TTA ATC AAA AAG CAA AGG GCT GAA AAT AAA
Gln Lys Pro Asp Asn Gly Leu Thr Arg Ile Ala Thr Leu Ile Lys Lys Gln Arg Ala Glu Asn Lys

AAT GTG GTT TTG ATT GAC AGC GGG GAT TTG TTG CAG GGC AAT AGC GCG GAG TTG TTT AAC GAT GAG
Asn Val Val Leu Ile Asp Ser Gly Asp Leu Leu Gln Gly Asn Ser Ala Glu Leu Phe Asn Asp Glu

CCC ATT CAC CCG CTC GTT TTA GCC GAA AAC GAT TTG AAA TTT GAT ATT CGT GTG CTT GGG AAT CAC
Pro Ile His Pro Leu Val Leu Ala Glu Asn Asp Leu Lys Phe Asp Ile Arg Val Leu Gly Asn His

GAG TTT AAT TTC AGT AAG GAT TTT TTA GAG AAA AAC ATT AAG GGG TTT AAT GGT GAT GTC GTG AAT
Glu Phe Asn Phe Ser Lys Asp Phe Leu Glu Lys Asn Ile Lys Gly Phe Asn Gly Asp Val Val Asn
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Figure 15

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GCG AAT ATC ATC AAG ACT ATA GAC AAT AAG CCG TTT GTA AAG CCT TAT GCA ATT AAA ACA ATT GAT
Ala Asn Ile Ile Lys Thr Ile Asp Asn Lys Pro Phe Val Lys Pro Tyr Ala Ile Lys Thr Ile Asp

GGC GTG AGG GTG GCG GTT GTG GGG TAT GTG GTG GCG CAC ATC CCC ACT TGG GAG GCC GCT ACG CCT
Gly Val Arg Val Ala Val Val Gly Tyr Val Val Ala His Ile Pro Thr Trp Glu Ala Ala Thr Pro

GAA CAT TTT GCA GGT TTA AAG TTT TTG GAC GCC AAA GAA GCG TTA AAA AAG ACT TTG AAA GAG CTA
Glu His Phe Ala Gly Leu Lys Phe Leu Asp Ala Lys Glu Ala Leu Lys Lys Thr Leu Lys Glu Leu

AAA GGG AAG TAT GAT ATT TTG ATT GGT GCT TTT CAT TTG GGG CGA GAA GAT GAG AAA GGT GGC GAC
Lys Gly Lys Tyr Asp Ile Leu Ile Gly Ala Phe His Leu Gly Arg Glu Asp Glu Lys Gly Gly Asp

GGA ATA CCT GAT CTG GCG AAA AAA TTC CCG CAA TTT GAC ATC ATT TTT GCA GGG CAT GAG CAT GCG
Gly Ile Pro Asp Leu Ala Lys Lys Phe Pro Gln Phe Asp Ile Ile Phe Ala Gly His Glu His Ala

GTT TAT AAC ACC AAA ATA GGA AAG GTG CAT ACC ATT GAG CCT GGA GCG TAT GGG GCT TAT CTG GCA
Val Tyr Asn Thr Lys Ile Gly Lys Val His Thr Ile Glu Pro Gly Ala Tyr Gly Ala Tyr Leu Ala

AAA GGC GTG GTA GTA TTT GAC ACC AAA ACG AAG AAA AAA ATC GTA ACG ACT GAA AAT TTA CCC ACA
Lys Gly Val Val Val Phe Asp Thr Lys Thr Lys Lys Lys Ile Val Thr Thr Glu Asn Leu Pro Thr

AAA GGC GTG CCA GAA GAT GAA GAA TTA GCG AAA AAA TAT GAA TAT GTG GAT AAA AAA TCA AAA GAA
Lys Gly Val Pro Glu Asp Glu Glu Leu Ala Lys Lys Tyr Glu Tyr Val Asp Lys Lys Ser Lys Glu

TAC GCT AAT GAA GTG GTT GGC GAA GTT ACA AAA ACC TTT ATT GAC AGG CCT GAT TTC ATC ACA GGA
Tyr Ala Asn Glu Val Val Gly Glu Val Thr Lys Thr Phe Ile Asp Arg Pro Asp Phe Ile Thr Gly

GGA GAA AAA ATC ACT ACG ATG CCC ACC GCC GCC TTG CAA GAA ACA CCG GTG ATA GAA TTG ATC AAT
Gly Glu Lys Ile Thr Thr Met Pro Thr Ala Ala Leu Gln Glu Thr Pro Val Ile Glu Leu Ile Asn

AAA GTG CAA AAA TAT TAC GCA AAA GCC GAT GTT TCA GCG GCC GCC TTA TTC AAT TTT GGG GCC AAT
Lys Val Gln Lys Tyr Tyr Ala Lys Ala Asp Val Ser Ala Ala Ala Leu Phe Asn Phe Gly Ala Asn

TTG AAA AAA GGG CCT TTC AAA AGA AAA GAT GTC GCC TAC ATT TAC AAG TTC GCT AAC ACG CTC ATT
Leu Lys Lys Gly Pro Phe Lys Arg Lys Asp Val Ala Tyr Ile Tyr Lys Phe Ala Asn Thr Leu Ile

GGA GTG GAG ATA ACG GGT GAA AAT CTG TTG AAA TAC ATG GAA TGG TCG TAT CAA TTT TAC AAT CAG
Gly Val Glu Ile Thr Gly Glu Asn Leu Leu Lys Tyr Met Glu Trp Ser Tyr Gln Phe Tyr Asn Gln

TTG CAA CCA GGC GAT TTA ACG ATC AGT TTT AAT GAA AAT ATT CGT GGT TAT AAC TTT GAT ATG TTT
Leu Gln Pro Gly Asp Leu Thr Ile Ser Phe Asn Glu Asn Ile Arg Gly Tyr Asn Phe Asp Met Phe

TCT GGC GTG AAA TAC CAG GTT GAT GTT ACA AAA CCC GCC
Ser Gly Val Lys Tyr Gln Val Asp Val Thr Lys Pro Ala
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HPC036

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TTG GGT ATC AAT ATG TGT TCT AAA AAA ATA AGA AAT TTC ATT TTA TGC TTT GGT TTT ATT TTA AGC
Met Gly Ile Asn Met Cys Ser Lys Lys Ile Arg Asn Phe Ile Leu Cys Phe Gly Phe Ile Leu Ser

TTG CAC GCT GAA GAG AGT ATG ACT NTG ACT GAA GAA AAT ACC CCT AAA GAC GCT CCC ATT CTT TTG
Leu His Ala Glu Glu Ser Met Thr  ? Thr Glu Glu Asn Thr Pro Lys Asp Ala Pro Ile Leu Leu

GAA GAA AAA CGC GCC CAA ACG CTA GAG TTT GAA GAA AAC AAG GAA GTT AAA AAG AAT ATT GAT GAA
Glu Glu Lys Arg Ala Gln Thr Leu Glu Phe Glu Glu Asn Lys Glu Val Lys Lys Asn Ile Asp Glu

AAA AGC CTG CTT GAA GAA ATC CAT AAG AAA AAA CGC CAG CTT TAC ATG CTC AAA GGG GAA TTG CAT
Lys Ser Leu Leu Glu Glu Ile His Lys Lys Lys Arg Gln Leu Tyr Met Leu Lys Gly Glu Leu His

GAA AAA AAT GAA TCC ATT TTA TTC CAA CGA ATG GCT AAA AAC AAG AGC GGT TTT TTT ATA GGC GTA
Glu Lys Asn Glu Ser Ile Leu Phe Gln Arg Met Ala Lys Asn Lys Ser Gly Phe Phe Ile Gly Val

ATT CTT GGC GAT ATA GGG ATT AAC GCT CAT CCT AAC ACC CGA TCT TAT GAG AGC TTT GAA CCT TTA
Ile Leu Gly Asp Ile Gly Ile Asn Ala His Pro Asn Thr Arg Ser Tyr Glu Ser Phe Glu Pro Leu

AGC AAC ATT CAA GAT TCT CCT TTA TTG TAT GGC TTA AGG AGC GGG TAT CAA AAG TAT TTT GCT AAC
Ser Asn Ile Gln Asp Ser Pro Leu Leu Tyr Gly Leu Arg Ser Gly Tyr Gln Lys Tyr Phe Ala Asn

GGG ATT AGC GCC TTA CGC TTT TAT GGG GAG TAT TTA GGG GGG GCG ATG AAA GGG TTT AAA AGC GAT
Gly Ile Ser Ala Leu Arg Phe Tyr Gly Glu Tyr Leu Gly Gly Ala Met Lys Gly Phe Lys Ser Asp

TCT TTA GCC TCT TAT CAA ACC GCA AGC TTG AAC ATT GAT TTG TTG ATG GAT AAG CCT ATT GAT AAA
Ser Leu Ala Ser Tyr Gln Thr Ala Ser Leu Asn Ile Asp Leu Leu Met Asp Lys Pro Ile Asp Lys
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Figure 15

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GAA AAA AGG TTT GCG TTA GGG ATA TTT GGA GGC GTT GGA GTG GGG TGG AAT GGG ATG TAT CAA AAT
Glu Lys Arg Phe Ala Leu Gly Ile Phe Gly Gly Val Gly Val Gly Trp Asn Gly Met Tyr Gln Asn

TTA AAA GAG ATT AAA GGG TAT TCA CAG CCT AAC GCT TTT GGA TTA GTG CTA AAT TTA GGG GTG AGC
Leu Lys Glu Ile Lys Gly Tyr Ser Gln Pro Asn Ala Phe Gly Leu Val Leu Asn Leu Gly Val Ser

ATG ACG CTT AAC CTC AAA CAC CGC TTT GAA TTA GCC TTA AAA ATG CCT CCC TTA AAA GAA ACT TCG
Met Thr Leu Asn Leu Lys His Arg Phe Glu Leu Ala Leu Lys Met Pro Pro Leu Lys Glu Thr Ser

CAA ACT TTT TTA TAT TAT TTT AAA AGC ACT AAT ATT TAT TAT ATT AGT TAC AAC TAT TTA TTG TAA
Gln Thr Phe Leu Tyr Tyr Phe Lys Ser Thr Asn Ile Tyr Tyr Ile Ser Tyr Asn Tyr Leu Leu ---
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Figure 15

HPC039

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ATG TCA GAA AAA GAA AGA CTG AAT GAA GTG ATC TTA GAA GAA GAA AAT AAT GGG GGC GGC ACT AAA
Met Ser Glu Lys Glu Arg Leu Asn Glu Val Ile Leu Glu Glu Glu Asn Asn Gly Gly Gly Thr Lys

AAG GTG TTT TTG ATC GTG GCT ATA GCC ATT ATC ATT TTA GCG GTG CTT TTA ATG GTG TTT TGG AAA
Lys Val Phe Leu Ile Val Ala Ile Ala Ile Ile Ile Leu Ala Val Leu Leu Met Val Phe Trp Lys

AGC ACG AGA GTC GCT CCT AAA GAG ACT TTT TTA CAA ACC GAT AGC GGG ATG CAA AAA ATA GGC AAC
Ser Thr Arg Val Ala Pro Lys Glu Thr Phe Leu Gln Thr Asp Ser Gly Met Gln Lys Ile Gly Asn

ACT AAA GAC GAG AAA AAA GAC GAT GAG TTT GAA AGC TTG AAT TTG GAT CCT TCC AAG CAA GAA GAC
Thr Lys Asp Glu Lys Lys Asp Asp Glu Phe Glu Ser Leu Asn Leu Asp Pro Ser Lys Gln Glu Asp

AAG CTA GAC AAA GTA GCG GAT AAT GTT AAA AAA CAA GAA AAT GAT GCG TTT AAC ATG CCC ACT CAA
Lys Leu Asp Lys Val Ala Asp Asn Val Lys Lys Gln Glu Asn Asp Ala Phe Asn Met Pro Thr Gln

ACC AAT CAA ACT CAA ACG GAG ATG AAA ACA GCA GAA GAA ACG CAA GAA GCT CAA AAA GAA TTA AAA
Thr Asn Gln Thr Gln Thr Glu Met Lys Thr Ala Glu Glu Thr Gln Glu Ala Gln Lys Glu Leu Lys

GCT GTT GAG CAC ACT AGC GCT CAA AAA GAA TCT CAA GCT GTG GCT AAA AAA GAA ACC CCC CAT AAA
Ala Val Glu His Thr Ser Ala Gln Lys Glu Ser Gln Ala Val Ala Lys Lys Glu Thr Pro His Lys

AAG CCC AAA GCA ACC CCT AAA GAT AAG GAA GCT CAT AAA GAT AAA GAT AAG CAT GCG GTT AAA GAG
Lys Pro Lys Ala Thr Pro Lys Asp Lys Glu Ala His Lys Asp Lys Asp Lys His Ala Val Lys Glu

CTA AAA GTC AAA AAA GAA GCT CAT AAA GAA GTT CCT AAA AAA GCC AAT TCT AAA ACC ACT CTT ACT
Leu Lys Val Lys Lys Glu Ala His Lys Glu Val Pro Lys Lys Ala Asn Ser Lys Thr Thr Leu Thr

AAA GGG CAT TAT TTG CAA GTG GGG GTT TTT GCG CAC ACG CCC AAT AAA GCC TTT TTG CAA GCG TTT
Lys Gly His Tyr Leu Gln Val Gly Val Phe Ala His Thr Pro Asn Lys Ala Phe Leu Gln Ala Phe

AAC CAA TTC CCC CAT AAG ATT GAA GAT AGG GGA GCA ACG AAG CGC TAT CTC ATA GGC CCT TAT AAG
Asn Gln Phe Pro His Lys Ile Glu Asp Arg Gly Ala Thr Lys Arg Tyr Leu Ile Gly Pro Tyr Lys

AGC AAG CAA GAA GCC TTA ATG CAT GCT GAT GAA GTC AGC AAA AAG ATG ACT AAA CCG GTT GTC ATA
Ser Lys Gln Glu Ala Leu Met His Ala Asp Glu Val Ser Lys Lys Met Thr Lys Pro Val Val Ile

GAA GCG CAT TAG
Glu Ala His ---
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Figure 15

HPC048

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ATG AAA TCT AAA AAA CTT TAT TTG GCT TTA ATC ATA GGG GTT TTA TTA GCG TTT TTA ACC CTA TCT
Met Lys Ser Lys Lys Leu Tyr Leu Ala Leu Ile Ile Gly Val Leu Leu Ala Phe Leu Thr Leu Ser

TCA TGG CTG GGT AAT AGC GGT TTA GTG GGG CGT TTT GGG GTG TGG TTT GCC GCA CTC AAT AAA AAA
Ser Trp Leu Gly Asn Ser Gly Leu Val Gly Arg Phe Gly Val Trp Phe Ala Ala Leu Asn Lys Lys

TAT TTT GGG TAT CTT TCA TTC ATT AAT CTG CCC TAT TTA GCG TGG GTT TTA TTC CTT TTA TAC AAG
Tyr Phe Gly Tyr Leu Ser Phe Ile Asn Leu Pro Tyr Leu Ala Trp Val Leu Phe Leu Leu Tyr Lys

ACT ADA AAC CCT TTT ACA GAA ATC GTT TTA GAA AAA ACT TTA GGG CAT CTA TTA GGC ATT TTA TCT
Thr   ? Asn Pro Phe Thr Glu Ile Val Leu Glu Lys Thr Leu Gly His Leu Leu Gly Ile Leu Ser

TTG CTC TTT TTA CAA TCT AGC CTA TTG AAT CAA GGG GAA ATC GGC AAC AGC GTG CGT TTG TTT TTA
Leu Leu Phe Leu Gln Ser Ser Leu Leu Asn Gln Gly Glu Ile Gly Asn Ser Val Arg Leu Phe Leu

CGC CCT TTT ATA GGG GAT TTT GGG CTT TAT GCG CTG ATA ACG CTT ATG GTA GTT ATT TCT TAT TTG
Arg Pro Phe Ile Gly Asp Phe Gly Leu Tyr Ala Leu Ile Thr Leu Met Val Val Ile Ser Tyr Leu

ATT TTA TTC AAA CTA CCC CCT AAA AGC GTT TTT TAT CCT TAT ATG AAC AAA ACA CAA AAC CTT TTA
Ile Leu Phe Lys Leu Pro Pro Lys Ser Val Phe Tyr Pro Tyr Met Asn Lys Thr Gln Asn Leu Leu

AAA GAG ATT TAC AAA CAA TGC CTA CAA GCC TTT AGC CCT AAT TTT AGC CCA AAA AAA GAG GAT TTT
Lys Glu Ile Tyr Lys Gln Cys Leu Gln Ala Phe Ser Pro Asn Phe Ser Pro Lys Lys Glu Asp Phe

GAA AAC ACC TTA TCA GAT CTT CAA AAA AAA GAA ACC AAC AAC GAC AAA GAA AAA GAA AAT CTC AAA
Glu Asn Thr Leu Ser Asp Leu Gln Lys Lys Glu Thr Asn Asn Asp Lys Glu Lys Glu Asn Leu Lys

GAA AAC CCT ATT GAT GAA AAC CAC AAA ACC CCT AAC GAA GAA TCG TTT CTA GCG ATC CCT ACC CCC
Glu Asn Pro Ile Asp Glu Asn His Lys Thr Pro Asn Glu Glu Ser Phe Leu Ala Ile Pro Thr Pro

TAT AAC ACG ACT TTA AAC GAT TCA GAG CCG CAA GAA GGC TTG GTT CAA ATT TCC CCT CAC CCC CCT
Tyr Asn Thr Thr Leu Asn Asp Ser Glu Pro Gln Glu Gly Leu Val Gln Ile Ser Pro His Pro Pro

ACC CAT TAC ACC ATT TAC CCT AAA AGA AAC CGA TTT GAT GAT TTG ACT AAC CCC ACT AAC CCC CCT
Thr His Tyr Thr Ile Tyr Pro Lys Arg Asn Arg Phe Asp Asp Leu Thr Asn Pro Thr Asn Pro Pro

TTA AAA GAA CCT AAG CAA GAA ACC AAA GAA AGA GAA CCC ATG CCC ACA AAA GAA ACT CTT ACG CCC
Leu Lys Glu Pro Lys Gln Glu Thr Lys Glu Arg Glu Pro Met Pro Thr Lys Glu Thr Leu Thr Pro

GCC ACA CTC AAA CCT ATC ATA TCA GCA CCC GTC ATG CCC GCA TCT GCA CCC AAC CTA GAA AAT GAC
Ala Thr Leu Lys Pro Ile Ile Ser Ala Pro Val Met Pro Ala Ser Ala Pro Asn Leu Glu Asn Asp

AAC AAA ACA GAA AAC CAA AAA ACC CCC AAC CAC CCC ATA AAA GAA GAT GAT TTA CAA GAA AGC CCA
Asn Lys Thr Glu Asn Gln Lys Thr Pro Asn His Pro Ile Lys Glu Asp Asp Leu Gln Glu Ser Pro

CAG GAA AAC CCA CAA AAA GAA AAT CAA AAA GAA AAT ATA GAA GAA AAA GAA AAT CTC AAA GAA GAA
Gln Glu Asn Pro Gln Lys Glu Asn Gln Lys Glu Asn Ile Glu Glu Lys Glu Asn Leu Lys Glu Glu

GAA AAA GAA ACG CAA AAC GCT CCA AAC TTT AGC CCA CTA ACC CCC ACA AAC GCT AAA AAA CCC GTT
Glu Lys Glu Thr Gln Asn Ala Pro Asn Phe Ser Pro Leu Thr Pro Thr Asn Ala Lys Lys Pro Val

ATG GTT AAA GAA TTG AGC GAA AAT AAA GAG ATA TTA GAC GGA TTG GAT TAT GGC GAA GTG CAA AAA
Met Val Lys Glu Leu Ser Glu Asn Lys Glu Ile Leu Asp Gly Leu Asp Tyr Gly Glu Val Gln Lys

MCC CAA GAT TAT GAG CTT CCC ACC ACG CAA TTA TTG AAT GCG GTT TGT TTG AAA GAA ACT TCT TTA
  ? Gln Asp Tyr Glu Leu Pro Thr Thr Gln Leu Leu Asn Ala Val Cys Leu Lys Glu Thr Ser Leu

GAC GAA AAC GAG ATT GAC CAA AAA ATT CAG GAT CTA TTG AGC AAA CTG CGC ACC TTT AAA ATT GAT
Asp Glu Asn Glu Ile Asp Gln Lys Ile Gln Asp Leu Leu Ser Lys Leu Arg Thr Phe Lys Ile Asp

GGC GAT ATT ATC CGC ACT TAT TCA GGC CCT ATT GTA ACC ACT TTT GAA TTC CGC CCA GCT CCT AGC
Gly Asp Ile Ile Arg Thr Tyr Ser Gly Pro Ile Val Thr Thr Phe Glu Phe Arg Pro Ala Pro Ser

GTT AAG GTG AGT CGT ATT TTA GGA TTG AGC GAT GAT TTA GCG ATG ACT TTA TGT GCT GAA TCC ATT
Val Lys Val Ser Arg Ile Leu Gly Leu Ser Asp Asp Leu Ala Met Thr Leu Cys Ala Glu Ser Ile

CGC ATT CAA GCC CCT ATT AAA GGT AAA GAT GTC GTT GGC ATT GAA ATC CCT AAC AGC CAA AGC CAA
Arg Ile Gln Ala Pro Ile Lys Gly Lys Asp Val Val Gly Ile Glu Ile Pro Asn Ser Gln Ser Gln

ATT ATT TAC TTG AGA GAA ATT TTA GAA AGC GAA TTG TTT CAA AAA TCC AGC TCG CCC TTA ACT CTA
Ile Ile Tyr Leu Arg Glu Ile Leu Glu Ser Glu Leu Phe Gln Lys Ser Ser Ser Pro Leu Thr Leu
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Figure 15

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GCT TTA GGC AAA GAC ATT GTG GGT AAC CCT TTC ATC ACG GAT TTA AAA AAG CTC CCC CAT TTG CTC
Ala Leu Gly Lys Asp Ile Val Gly Asn Pro Phe Ile Thr Asp Leu Lys Lys Leu Pro His Leu Leu

ATC GCC G
Ile Ala
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Figure 15

HPC050

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ATG AAA AAA CCC TAC AGA AAG ATT TCT GAT TAT GCG ATC GTG GGT GGT TTG AGT GCG TTA GTG ATG
Met Lys Lys Pro Tyr Arg Lys Ile Ser Asp Tyr Ala Ile Val Gly Gly Leu Ser Ala Leu Val Met

GTG AGC ATT GTG GGG TGT AAG AGC AAT GCC GAT GAC AAA CCC AAA GAG CAA AGC TCT TTA AGT CAA
Val Ser Ile Val Gly Cys Lys Ser Asn Ala Asp Asp Lys Pro Lys Glu Gln Ser Ser Leu Ser Gln

AGC GTT CAA AAA GGT GCG TTT GTG ATT TTA GAA GAG CAA AAG GAT AAA TCT TAC AAG GTT GTT GAA
Ser Val Gln Lys Gly Ala Phe Val Ile Leu Glu Glu Gln Lys Asp Lys Ser Tyr Lys Val Val Glu

GAA TAC CCC AGC TCA AGA ACC CAC ATC ATA GTG CGC GAT TTG CAA GGC AAT GAA CGC GTG TTG AGC
Glu Tyr Pro Ser Ser Arg Thr His Ile Ile Val Arg Asp Leu Gln Gly Asn Glu Arg Val Leu Ser

AAT GAA GAG ATT CAA AAG CTC ATT AAA GAA GAA GAG GCC AAA ATT GAT AAC GGC ACG AGC AAG CTT
Asn Glu Glu Ile Gln Lys Leu Ile Lys Glu Glu Glu Ala Lys Ile Asp Asn Gly Thr Ser Lys Leu

GTT CAA CCT AAT AAT GGA GGG AGT AAT GAA AGC TCA GGC TTT GGC TTG GGG AGT GCG ATT TTA GGG
Val Gln Pro Asn Asn Gly Gly Ser Asn Glu Ser Ser Gly Phe Gly Leu Gly Ser Ala Ile Leu Gly

AGC GCG GCG GGG GCG ATT TTA GGG AGT TAT ATT GGC AAT AAG CTT TTC AAT AAC CCT AAT TAT CAG
Ser Ala Ala Gly Ala Ile Leu Gly Ser Tyr Ile Gly Asn Lys Leu Phe Asn Asn Pro Asn Tyr Gln

CAA AAC GCC CAA CGG ACC TAC AAA TCC CCA CAA GCT TAC CAA CGC TCT CAA AAT TCC TTT TCT AAA
Gln Asn Ala Gln Arg Thr Tyr Lys Ser Pro Gln Ala Tyr Gln Arg Ser Gln Asn Ser Phe Ser Lys

AGC GCA CCC AGC GCT TCA AGC ATG GGA GGA GCG AGT AAG GGA CAG AGC GGG TTT TTT GGC TCT AGT
Ser Ala Pro Ser Ala Ser Ser Met Gly Gly Ala Ser Lys Gly Gln Ser Gly Phe Phe Gly Ser Ser

AGA CCT ACT AGT TCG CCT GCG GTA AGC TCT GGG ACA AGG GGC TTT AAC TCA TAA
Arg Pro Thr Ser Ser Pro Ala Val Ser Ser Gly Thr Arg Gly Phe Asn Ser ---
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HPC056

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TTG TTT TTA GTC AAA MMM MTA GGC GTG ATA GTA GTG GTT TTA ATA GGC TTT CTA GCT TGC TCG CAA
Met Phe Leu Val Lys  ?  ? Gly Val Ile Val Val Val Leu Ile Gly Phe Leu Ala Cys Ser Gln

GAG AGG TTT ATC CAA TTG CAA AAA AAA GCC CAA GAG CAA GAA AAT GAC GGC TCT AAA CGC CCT AGC
Glu Arg Phe Ile Gln Leu Gln Lys Lys Ala Gln Glu Gln Glu Asn Asp Gly Ser Lys Arg Pro Ser

TAT GTG GAT TCG GAT TAT GAA GTC TTT AGC GAA ACG ATT TTT TTA CAA AAC ATG GTG TAT CAG CCT
Tyr Val Asp Ser Asp Tyr Glu Val Phe Ser Glu Thr Ile Phe Leu Gln Asn Met Val Tyr Gln Pro

ATA GAA GAA AGA GAT TCT TTC GCC CAA CTG ACT AAA GAT GGA GAC GAT TCT TTT AAC CCC GAA ACT
Ile Glu Glu Arg Asp Ser Phe Ala Gln Leu Thr Lys Asp Gly Asp Asp Ser Phe Asn Pro Glu Thr

TCG GTG ATT TTA TTG AAT GAG CCA AGC GAT AAC GAT ACA AAA AAC CCG CCC TTA TAC CCA AAT GAG
Ser Val Ile Leu Leu Asn Glu Pro Ser Asp Asn Asp Thr Lys Asn Pro Pro Leu Tyr Pro Asn Glu

TCT AAT ACT AAC ACT GCC AAT AAC GAT ACA AAA AAC CCG TTC CTT TAC AAA CCG AAA AGA AAA ACA
Ser Asn Thr Asn Thr Ala Asn Asn Asp Thr Lys Asn Pro Phe Leu Tyr Lys Pro Lys Arg Lys Thr

AAA AAT CCA AAA CTC ATT GAA TAT TCC CAA CAA AAT TTC TAC CCC CTA AAG GAT GGG GAT ATT ATC
Lys Asn Pro Lys Leu Ile Glu Tyr Ser Gln Gln Asn Phe Tyr Pro Leu Lys Asp Gly Asp Ile Ile

ATG AGT AAA GAA GGG GAT CAA TGG TTG GTA GAA ATC AAA TCC AAA GCC TTG AAG CGT TTT TTA AAA
Met Ser Lys Glu Gly Asp Gln Trp Leu Val Glu Ile Lys Ser Lys Ala Leu Lys Arg Phe Leu Lys

GAT CAA AAC GAT AAA GAT CGC CAG ATC CAA ACT TTT ACT TTT AAT GAC ACT AAA ACG CAA ATT GCG
Asp Gln Asn Asp Lys Asp Arg Gln Ile Gln Thr Phe Thr Phe Asn Asp Thr Lys Thr Gln Ile Ala

CAA TTT AAG GGC AAA ATT TCT TCG TAT GTT TAT ACC ACC AAT AAC AGC GAT TTG AGT TTA AGG CCT
Gln Phe Lys Gly Lys Ile Ser Ser Tyr Val Tyr Thr Thr Asn Asn Ser Asp Leu Ser Leu Arg Pro

TTT TAT GAA TCG TTT TTG TTA GAA AAA AAG AGC GAT GAT CTT TAT ATG ATA GGG GAT AAG GCT TTA
Phe Tyr Glu Ser Phe Leu Leu Glu Lys Lys Ser Asp Asp Leu Tyr Met Ile Gly Asp Lys Ala Leu

GAC GCC ATT GAG ATT TCA AAG TGT CAA ATG GTG TTA AAA AAG CAT TCA ACC GAT AAA TTA GAC AGC
Asp Ala Ile Glu Ile Ser Lys Cys Gln Met Val Leu Lys Lys His Ser Thr Asp Lys Leu Asp Ser

CAG CAT AAA GCC ATC AGT ATT GAT TTG GAC TTT AAA AAA GAG CGC TTT AAG AGC GAT ACG GAA CTT
Gln His Lys Ala Ile Ser Ile Asp Leu Asp Phe Lys Lys Glu Arg Phe Lys Ser Asp Thr Glu Leu

TTT TTA GAA TGC CAA AGT TAG
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Figure 15

Phe Leu Glu Cys Gln Ser ---

Figure 15

HPC059

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ATG AAT TTT TTT AAA ATC CTT TTA ATG GAA TTA AGG GCT ATT GTT TCT CAT ATT GGC GTT TTA TTA
Met Asn Phe Phe Lys Ile Leu Leu Met Glu Leu Arg Ala Ile Val Ser His Ile Gly Val Leu Leu

ATC CTT ATA GGC GCT CCT TTA ATC TAT GGC TTG TTA TAC CCT TTG CCT TAT TTA AAA GAC ATC GTA
Ile Leu Ile Gly Ala Pro Leu Ile Tyr Gly Leu Leu Tyr Pro Leu Pro Tyr Leu Lys Asp Ile Val

ACG CAG CAA AAA ATC GCC CTT GTA GAT GAA GAC AAT TCC TTC CTT TCT AGG CAA TTA GCC TTC ATG
Thr Gln Gln Lys Ile Ala Leu Val Asp Glu Asp Asn Ser Phe Leu Ser Arg Gln Leu Ala Phe Met

GCG CAA AGC TCC AAC GAG TTA GAA ATC GCT TTT TTT AGC CCC TCT ATG CTG GAA GCC AAA AAG CTT
Ala Gln Ser Ser Asn Glu Leu Glu Ile Ala Phe Phe Ser Pro Ser Met Leu Glu Ala Lys Lys Leu

TTA AAA GAA GAA AAA ATT TAT GGG ATC TTG CAT ATC CCT TCG TAT TTT GAA GCC AAT ATC CAT AAG
Leu Lys Glu Glu Lys Ile Tyr Gly Ile Leu His Ile Pro Ser Tyr Phe Glu Ala Asn Ile His Lys

CAG GTG CCT GTA ACG ATA GAT TTT TAT GCG AAT TCC AAT TAC TTT TTG ATT TAT GGC ACC TTA GCG
Gln Val Pro Val Thr Ile Asp Phe Tyr Ala Asn Ser Asn Tyr Phe Leu Ile Tyr Gly Thr Leu Ala

AAT GCG GTG GTG GAG AGC ATC AAC GCT TTA AAT GAT GAG ATA AGA TTC AAA CGC AAC GCC CAA ATA
Asn Ala Val Val Glu Ser Ile Asn Ala Leu Asn Asp Glu Ile Arg Phe Lys Arg Asn Ala Gln Ile

GAA GAA GCT GAA TTA GGG ACA GAC GGG ATT AAA ATC AGG CCT ATC GCT TTG TAT AAC CCT AGT GAG
Glu Glu Ala Glu Leu Gly Thr Asp Gly Ile Lys Ile Arg Pro Ile Ala Leu Tyr Asn Pro Ser Glu

GGG TAT TTG AAT TAC GCG CTC TCT AGC GTG TTT ATT TTC ATC TTA CAC CAG GTG ATG CTC ATT GCA
Gly Tyr Leu Asn Tyr Ala Leu Ser Ser Val Phe Ile Phe Ile Leu His Gln Val Met Leu Ile Ala

AGC AGC ATG TTT ACT AGC TCT AGG CGT TTG GAA TTA GCC CTT TTA GAT AAA AAG CAA ATC GCT TTA
Ser Ser Met Phe Thr Ser Ser Arg Arg Leu Glu Leu Ala Leu Leu Asp Lys Lys Gln Ile Ala Leu

AGG CTG TGC GCA AGA CTC TTG GTG TTT ATG GCA GCG TTT AGC GTT TTT GTT TTG TTG TAT TTT GGG
Arg Leu Cys Ala Arg Leu Leu Val Phe Met Ala Ala Phe Ser Val Phe Val Leu Leu Tyr Phe Gly

GCG CTG TTT TCT TTT TAT GGG ATC GAA CGG CAT GCG AGT GCT TTA ATG GTG TTT TTG AAT AGC TCC
Ala Leu Phe Ser Phe Tyr Gly Ile Glu Arg His Ala Ser Ala Leu Met Val Phe Leu Asn Ser Ser

ATA TTC ATG CTT GCA ACC TTG AGT TTG GGG TCG TTT TTA GGC GCA TGG ATC AAA AAT GAA GCC CAC
Ile Phe Met Leu Ala Thr Leu Ser Leu Gly Ser Phe Leu Gly Ala Trp Ile Lys Asn Glu Ala His

ACC ACT CAA ATC GTT TTG ATT TCT TCT TTG CCC TTG ATT TTT ATG ATG GGT TTT GTG TGG CCT TTT
Thr Thr Gln Ile Val Leu Ile Ser Ser Leu Pro Leu Ile Phe Met Met Gly Phe Val Trp Pro Phe

GAA TCC TTG CCC TCT TAT TTG CAG GTT TTC GTT CAA ATA GTG CCT GCT TAT CAT GGG ATC AGT TTG
Glu Ser Leu Pro Ser Tyr Leu Gln Val Phe Val Gln Ile Val Pro Ala Tyr His Gly Ile Ser Leu

TTA GGG CGA TTG AAT CAA ATG CAT GCG GAA TTT ATA GAT GTT TCT GTC CAT TTT TAT GCG CTT ATT
Leu Gly Arg Leu Asn Gln Met His Ala Glu Phe Ile Asp Val Ser Val His Phe Tyr Ala Leu Ile

GCG ATT TTT ATT GCG AGT TTT ATA GGG AGT GTC TTT AAA CTC AGC TCT TTA AAG AAA GCT TGT GAA
Ala Ile Phe Ile Ala Ser Phe Ile Gly Ser Val Phe Lys Leu Ser Ser Leu Lys Lys Ala Cys Glu

AAC GCT TAA
Asn Ala ---
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Figure 15

HPC063

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GTG CGT TTG TTT AGA TTT GTG GGG TGG TAT TAT TTC AAA TAC TTT TTA ATC GTG CTT TTG GCT TTG
Met Arg Leu Phe Arg Phe Val Gly Trp Tyr Tyr Phe Lys Tyr Phe Leu Ile Val Leu Leu Ala Leu

GAA TTG TTT TTT GTA GGC ATT GAC AGC TTG AAA TAC GCC GAT AAA ATG CCT GAT TCT GCG AAC ATG
Glu Leu Phe Phe Val Gly Ile Asp Ser Leu Lys Tyr Ala Asp Lys Met Pro Asp Ser Ala Asn Met

ATC ATT TTA TTT TTC ACC TAT GAT ATT TTA TTC GCC CTC AAT TAC ACC TTG CCC ATT TCC TTG CTT
Ile Ile Leu Phe Phe Thr Tyr Asp Ile Leu Phe Ala Leu Asn Tyr Thr Leu Pro Ile Ser Leu Leu

TTG GCG ATG GTT TTA TTT TAC ATC ACC TTC ATT AAA TCC AAC CAA TAC ACC GCC CTG CTC TCC ATT
Leu Ala Met Val Leu Phe Tyr Ile Thr Phe Ile Lys Ser Asn Gln Tyr Thr Ala Leu Leu Ser Ile

GGC TTT TCC AAA TGC CAG ATT TTA AGC CCT ATT TTT TTG ATT AGC TTA TTT TTC ACG GCT GTT TAT
Gly Phe Ser Lys Cys Gln Ile Leu Ser Pro Ile Phe Leu Ile Ser Leu Phe Phe Thr Ala Val Tyr

GTG GGG TTG AAC GCG ACT CCT TTT GTG TAT ATG GAA GAA AAA ACG CAA AAT TTA ATT TAT AAA GAC
Val Gly Leu Asn Ala Thr Pro Phe Val Tyr Met Glu Glu Lys Thr Gln Asn Leu Ile Tyr Lys Asp

AAT TCT TTG AGC GTT TCA GAG CAT TTG TTA GTG AAA TAT AAC GAT GAT TAC GTG TAT TTT GAT AAG
Asn Ser Leu Ser Val Ser Glu His Leu Leu Val Lys Tyr Asn Asp Asp Tyr Val Tyr Phe Asp Lys

ATT AAT CCC TTA TTG CAA AAA GCC CAA AAT ATC AAG GTT TTT CGC CTA AAA GAT AAG ACT TTG GAA
Ile Asn Pro Leu Leu Gln Lys Ala Gln Asn Ile Lys Val Phe Arg Leu Lys Asp Lys Thr Leu Glu

TCT TAT GCT GAA GCT AAA GAA GCT TTT TTT GAA GAC AAG TAT TGG ATC TTG CAT GAC ACT ACT ATC
Ser Tyr Ala Glu Ala Lys Glu Ala Phe Phe Glu Asp Lys Tyr Trp Ile Leu His Asp Thr Thr Ile

TAT GAG ATG CCC TTA AAT TTT GAA CTG GGT GCA AAC GCT TTA AAC ACC ACG CGT TTA AAA ACC TTT
Tyr Glu Met Pro Leu Asn Phe Glu Leu Gly Ala Asn Ala Leu Asn Thr Thr Arg Leu Lys Thr Phe

AAA ACG CTC AAA AAT TTC CGC CCT AAA GTT TTA GAC ACC ATT TAT CAA AAC AAG CCT GCG GTT TCT
Lys Thr Leu Lys Asn Phe Arg Pro Lys Val Leu Asp Thr Ile Tyr Gln Asn Lys Pro Ala Val Ser

ATC ACA GAC GCT CTT TTA TCC TTG CAT GCT TTA GTG CGC CAA AAC GCG GAC ACG AAA AAA GTG CGC
Ile Thr Asp Ala Leu Leu Ser Leu His Ala Leu Val Arg Gln Asn Ala Asp Thr Lys Lys Val Arg

TCG TTT TTG TAT GTG TTT GCG ATT TTG CCC TTT TTT GTG CCG TTT TTA AGC GTT TTA ATC GCT TAT
Ser Phe Leu Tyr Val Phe Ala Ile Leu Pro Phe Phe Val Pro Phe Leu Ser Val Leu Ile Ala Tyr

TTT TCG CCC AGT CTC GCC CGC TAT GAA AAC CTG GCT CTT TTA GGG CTA AAG TTT ATC ATT ATC ACG
Phe Ser Pro Ser Leu Ala Arg Tyr Glu Asn Leu Ala Leu Leu Gly Leu Lys Phe Ile Ile Ile Thr

CTC GTT GTT TGG GGG CTA TTC TTT GCT TTA GGG AAG TTC AGC ATT TCA GGG ATA CTC ATT CCT GAA
Leu Val Val Trp Gly Leu Phe Phe Ala Leu Gly Lys Phe Ser Ile Ser Gly Ile Leu Ile Pro Glu

ATA GGC GTT CTA TCG CCC TTT TTC GTA TTC TTA GCC CTC AGT CTT TGG TAT TTT AAA AAG CTT AAT
Ile Gly Val Leu Ser Pro Phe Phe Val Phe Leu Ala Leu Ser Leu Trp Tyr Phe Lys Lys Leu Asn

AAG AGG TTG TAG
Lys Arg Leu ---
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Figure 15

HPC068

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ATG AAA AAA ACA ACC CTC TTT GTA TTG GGC TTA TTA TTC AAT AGC TCT TTA AGC GCT GTT GAT GGA
Met Lys Lys Thr Thr Leu Phe Val Leu Gly Leu Leu Phe Asn Ser Ser Leu Ser Ala Val Asp Gly

GTT CCT AAA ACC GAG CCT TCT TCT TTG AAT TTG GCT GAA GAC AGC ACA CCC TTG AAC CAT TCT AAC
Val Pro Lys Thr Glu Pro Ser Ser Leu Asn Leu Ala Glu Asp Ser Thr Pro Leu Asn His Ser Asn

GCT CAA AAA CTT TCT TTA AAA AAC GCA TGG AAT AGG GTG TTA TCC AAC CAT GAA GGC TTG CAT GCG
Ala Gln Lys Leu Ser Leu Lys Asn Ala Trp Asn Arg Val Leu Ser Asn His Glu Gly Leu His Ala

CAA GAA TAC GCC ATT AAA AGA GCG AGT AAA ATG AAA TTA GCG GCT AAG CTT TCT TTT TTG CCT CAA
Gln Glu Tyr Ala Ile Lys Arg Ala Ser Lys Met Lys Leu Ala Ala Lys Leu Ser Phe Leu Pro Gln

ATT GAT TTG AGC GCT TTT TAT GTG TAC CTC TCT AAC CCT ATT AAA ATG GAT TTT GCC AGC CAA AAA
Ile Asp Leu Ser Ala Phe Tyr Val Tyr Leu Ser Asn Pro Ile Lys Met Asp Phe Ala Ser Gln Lys

CAA CCG GGC GTG CAA AAA GCC ACC AAC CAG ATC CAT CAA GGC TTG CAA AGC ATT CAG CAA AAT ATC
Gln Pro Gly Val Gln Lys Ala Thr Asn Gln Ile His Gln Gly Leu Gln Ser Ile Gln Gln Asn Ile

CCC CCT CAA GTC CTA ACC CCT CAA ATC CAA GCG GGC ATG CAA GGG GTG ATG CAA GGG TTT GGG GCT
Pro Pro Gln Val Leu Thr Pro Gln Ile Gln Ala Gly Met Gln Gly Val Met Gln Gly Phe Gly Ala

TTG AGC AGC ACT TTA GAA GCC CCC TTA TTG TTT TCT AAG CAA AAT GTG GTG ATT GGG GCT TTG AGC
Leu Ser Ser Thr Leu Glu Ala Pro Leu Leu Phe Ser Lys Gln Asn Val Val Ile Gly Ala Leu Ser

ATT ATT TAT CCC CTT TAT ATG GGT GGG GCA AGA TTC ACG ATG GTG CGC ATT GCG GAT TTG ATG CAA
Ile Ile Tyr Pro Leu Tyr Met Gly Gly Ala Arg Phe Thr Met Val Arg Ile Ala Asp Leu Met Gln

AAA GAC GCC AAT GAA GTG TAT CGC TTG AAA AAG CTT TCC ACT TTT CAA GAG CTT GTG AGC GTG TAT
Lys Asp Ala Asn Glu Val Tyr Arg Leu Lys Lys Leu Ser Thr Phe Gln Glu Leu Val Ser Val Tyr

TAT GGC ATG GTG TTA AAC GCA GAA GTG GCT GAA ACT TTA GAA GAG GTA GAA AAA GGC CAT TAT AAG
Tyr Gly Met Val Leu Asn Ala Glu Val Ala Glu Thr Leu Glu Glu Val Glu Lys Gly His Tyr Lys

CAT TTC CAA AAC GCT TTG AAA ATG CAA AAA GTA GGG CAA ATC GCT AGG GTA GAA ACC TTA GGC GCT
His Phe Gln Asn Ala Leu Lys Met Gln Lys Val Gly Gln Ile Ala Arg Val Glu Thr Leu Gly Ala

CAA GTG GCT TAT GAT AAG GCC CAT ATC GCT AGC GTT AAG GCT AAA GAC GTG TTA GAA GTT TCG CAA
Gln Val Ala Tyr Asp Lys Ala His Ile Ala Ser Val Lys Ala Lys Asp Val Leu Glu Val Ser Gln

CTC TCG TTC AAT TCT ATT TTA TCT AGC AAG GAC GAT TTA GCG CCT TCA AGC AAA TTA GAG ATC CAC
Leu Ser Phe Asn Ser Ile Leu Ser Ser Lys Asp Asp Leu Ala Pro Ser Ser Lys Leu Glu Ile His

ACC GAG AAA AAT CTG CCC GAT TTG AGC TTT TTT GTT TCT TCC ACG CTC AAT TCC TAC CCG GCT TTA
Thr Glu Lys Asn Leu Pro Asp Leu Ser Phe Phe Val Ser Ser Thr Leu Asn Ser Tyr Pro Ala Leu

AAG ACT TTA GAA AAT CAG GTT CAA ATT TCT AAA GAA AAC ACG AAA CTA CAG ATC GCT AAA TTC TTG
Lys Thr Leu Glu Asn Gln Val Gln Ile Ser Lys Glu Asn Thr Lys Leu Gln Ile Ala Lys Phe Leu

CCC CAA GTG AGT TTT TTT GGC TCT TAT ATC ATG AAG CAA AAC AAT TCG GTG TTT GAA GAC ATG ATC
Pro Gln Val Ser Phe Phe Gly Ser Tyr Ile Met Lys Gln Asn Asn Ser Val Phe Glu Asp Met Ile

CCT AGT TGG TTT GTG GGC GTM GCT GGG CGC ATG CST ATT CTT TCT CCC ACA GGG CGT ATC CAA AAA
Pro Ser Trp Phe Val Gly   ? Ala Gly Arg Met   ? Ile Leu Ser Pro Thr Gly Arg Ile Gln Lys

TAC CAA GCG AGC AAA TTA GCG GAG TTG CAA GCT AAT AGC GAA CAA ATC CAA GCT AAA AAA AAC ATG
Tyr Gln Ala Ser Lys Leu Ala Glu Leu Gln Ala Asn Ser Glu Gln Ile Gln Ala Lys Lys Asn Met

GAA TTG TTA GTG AAT AAG ACT TAT AAA GAG ACG CTT TCT TAT TTG AAA GAA TAC AAA AGC TTG CTT
Glu Leu Leu Val Asn Lys Thr Tyr Lys Glu Thr Leu Ser Tyr Leu Lys Glu Tyr Lys Ser Leu Leu

TCT AGC GTG GAA TTA GCC AAG GAA AAC TTA AAA CTC CAA GAG CAG GCT TTT TTA CAA GGC TTA AGC
Ser Ser Val Glu Leu Ala Lys Glu Asn Leu Lys Leu Gln Glu Gln Ala Phe Leu Gln Gly Leu Ser

ACG AAC GCT CAA GTC ATT GAT GCG AGG AAC ACG CTT TCT TCT ATC ATC GTG GAG CAA AAA AGC GTG
Thr Asn Ala Gln Val Ile Asp Ala Arg Asn Thr Leu Ser Ser Ile Ile Val Glu Gln Lys Ser Val

GCT TAT AAA TAC ATC GTT TCA TTA GCG AAT TTA ATG GCG TTA AGC GAT CAT ATT GAT TTA TTT TAT
Ala Tyr Lys Tyr Ile Val Ser Leu Ala Asn Leu Met Ala Leu Ser Asp His Ile Asp Leu Phe Tyr

GAA TTT GTT TAT TAA
Glu Phe Val Tyr ---
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Figure 15

HPC069

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ATG GTG TTA GTT AAA ATG GTG TTA GGG TTT TTG ATC CTT TTA AGC CCT TTG TAC GCT ACT GGA TTG
Met Val Leu Val Lys Met Val Leu Gly Phe Leu Ile Leu Leu Ser Pro Leu Tyr Ala Thr Gly Leu

GAT ATT VMA CAA ACG GAC ATT ATA GAG CGT TCT TTA AAT TTC CTC TTA TTT GCG GGG ATT TTG TGG
Asp Ile   ? Gln Thr Asp Ile Ile Glu Arg Ser Leu Asn Phe Leu Leu Phe Ala Gly Ile Leu Trp

TAT TTT TTG GCT AAA AAA CTG CGT TCA TTT TTA CGC TCC AAA AGC CTT GAA ATC TCC AAA CGA TTA
Tyr Phe Leu Ala Lys Lys Leu Arg Ser Phe Leu Arg Ser Lys Ser Leu Glu Ile Ser Lys Arg Leu

GAA GAG ATT CAA GCC CAA CTC AAA GTG AGT AAA GAA AAT AAG AAA AAA CTC TTA AAA GAA TTA GAG
Glu Glu Ile Gln Ala Gln Leu Lys Val Ser Lys Glu Asn Lys Lys Lys Leu Leu Lys Glu Leu Glu

CAA GCC AAA GAA AAA GCT GAA TTA ATT ATT TCT GAT GCG AAT AAA GAA GCT TAC ACG ATC ACG CAA
Gln Ala Lys Glu Lys Ala Glu Leu Ile Ile Ser Asp Ala Asn Lys Glu Ala Tyr Thr Ile Thr Gln

AAA TAC GAA TTG CAA ACC AAA ATG GAT GTG GAA AAT TTG ATC AAA AAT TCT AAG GCG TTG ATG GAT
Lys Tyr Glu Leu Gln Thr Lys Met Asp Val Glu Asn Leu Ile Lys Asn Ser Lys Ala Leu Met Asp

TTA GAA GTT AAA AAG ATC AAA AGA GAG CTG GTT GAR AGC GTT TTT RAA GAT CTA AGA GAG AGC AAA
Leu Glu Val Lys Lys Ile Lys Arg Glu Leu Val   ? Ser Val Phe   ? Asp Leu Arg Glu Ser Lys

ARA GTC TCT TTC AAT GCG CAA GAT TGC GTG AAT ATT TTG AVA CAV AGG CTT TAA
  ? Val Ser Phe Asn Ala Gln Asp Cys Val Asn Ile Leu   ?   ? Arg Leu ---
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HPC070

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ATG CTC GCT TCC ATT ATT GAA TTT TCC TTA CGC CAG CGA ATA ATC GTG ATT GTT GGC GCG ATT CTT
Met Leu Ala Ser Ile Ile Glu Phe Ser Leu Arg Gln Arg Ile Ile Val Ile Val Gly Ala Ile Leu

ATT TTG TTT TTT GGG ACT TAT AGT TTT ATC CAC ACT CCA GTA GAT GCT TTC CCG GAT ATT TCG CCC
Ile Leu Phe Phe Gly Thr Tyr Ser Phe Ile His Thr Pro Val Asp Ala Phe Pro Asp Ile Ser Pro

ACT CAA GTC AAA ATC ATT TTA AAA CTC CCC GGT TCT AGC CCT GAA GAA ATG GAA AAT AAC ATC GTG
Thr Gln Val Lys Ile Ile Leu Lys Leu Pro Gly Ser Ser Pro Glu Glu Met Glu Asn Asn Ile Val

CGC CCT TTA GAA TTG GAG CTT TTA GGC TTG AAA GGG CAA AAA TCT TTA AGA AGT ATT TCA AAA TAT
Arg Pro Leu Glu Leu Glu Leu Leu Gly Leu Lys Gly Gln Lys Ser Leu Arg Ser Ile Ser Lys Tyr

TCT ATT TCA GAC ATC ACG ATA GAT TTT GAT GAC AGC GTG GAT ATT TAT TTA GCG AGA AAC ATT GTT
Ser Ile Ser Asp Ile Thr Ile Asp Phe Asp Asp Ser Val Asp Ile Tyr Leu Ala Arg Asn Ile Val

AAT GAG CGC TTG AGC AGC GTG ATG AAA GAT TTA CCC GTG GGG GTT GAA GGG GGC ATG GCG CCC ATT
Asn Glu Arg Leu Ser Ser Val Met Lys Asp Leu Pro Val Gly Val Glu Gly Gly Met Ala Pro Ile

GTT ACG CCG CTA TCA GAT ATC TTT ATG TTC ACT ATT GAT GGC AAT ATC ACT GAG ATA GAA AAA CGA
Val Thr Pro Leu Ser Asp Ile Phe Met Phe Thr Ile Asp Gly Asn Ile Thr Glu Ile Glu Lys Arg

CAG CTT TTA GAC TTT GTG ATC CGC CCG CAA TTA AGA ATG ATT AGC GGC GTG GCG GAT GTC AAT TCT
Gln Leu Leu Asp Phe Val Ile Arg Pro Gln Leu Arg Met Ile Ser Gly Val Ala Asp Val Asn Ser

ATT GGA GGC TTT AGC AGG GCG TTT TGT GAT CGT GCC G
Ile Gly Gly Phe Ser Arg Ala Phe Cys Asp Arg Ala
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Figure 15

HPC076

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ATG GCT GAA AAT TCT TTC AAA AAT GTT TCC ACA CAA CCC AAA CCA TTT TTC TTA TTA CCA GTT AAA
Met Ala Glu Asn Ser Phe Lys Asn Val Ser Thr Gln Pro Lys Pro Phe Phe Leu Leu Pro Val Lys

ACC CTG TTT CTT TTA GGA GGC GTT TTT AGC GCG TTT TTT ATC CTT GTT GCT GGC TTG GTT TTT TTT
Thr Leu Phe Leu Leu Gly Gly Val Phe Ser Ala Phe Phe Ile Leu Val Ala Gly Leu Val Phe Phe

AAT TAC ACT AAT TCA ATG GAC CAT GCG ATT TTT AAC TTG ATG CGT TCA AAC TCT TCT AAC CCT ATT
Asn Tyr Thr Asn Ser Met Asp His Ala Ile Phe Asn Leu Met Arg Ser Asn Ser Ser Asn Pro Ile

TTA GAT CAA ACG CTC CGA CGC GTT GTT TTT TTA GGC TCT TCT CAA TTC GTG TTG CCT TTG AGC TTG
Leu Asp Gln Thr Leu Arg Arg Val Val Phe Leu Gly Ser Ser Gln Phe Val Leu Pro Leu Ser Leu

TTA GTG GGG GTG TTT TTA AGC TTG TAT CGT AAA AAT TTA GCA CTT GGG GTG TGG TTT GTG CTA AGC
Leu Val Gly Val Phe Leu Ser Leu Tyr Arg Lys Asn Leu Ala Leu Gly Val Trp Phe Val Leu Ser

GTG ATC TTA TTT GAA GCC CTT TTA GAA TCT TTA AAA CAC CTT TTG GCA CAC TCC ATT CAA TGG TTT
Val Ile Leu Phe Glu Ala Leu Leu Glu Ser Leu Lys His Leu Leu Ala His Ser Ile Gln Trp Phe

TCG CAC AGC GCT AAT TTC CCT AGC ACT ATC GCG CTT TCT TTG ACG CAT TTT TAT GGG TTG CTT GTT
Ser His Ser Ala Asn Phe Pro Ser Thr Ile Ala Leu Ser Leu Thr His Phe Tyr Gly Leu Leu Val

TTA TTA ATA CCC CAT TTG ATC ACG CAT CAA ATA TTT CAA AAC ATT CTT CCT TAT AGT TTG CTT GKT
Leu Leu Ile Pro His Leu Ile Thr His Gln Ile Phe Gln Asn Ile Leu Pro Tyr Ser Leu Leu  ?

TTG ATT CTT TTA ATT GGG TTA GCG CTG ATT GTT TTA GGG GTG TCT TTT AGC AGT GTT TTA GGA GGG
Leu Ile Leu Leu Ile Gly Leu Ala Leu Ile Val Leu Gly Val Ser Phe Ser Ser Val Leu Gly Gly

TTT TGT TTA GGG GCG TCA GGG GCT TGT TTT TCC ATA GGG ATT TAT TTG AGC GTG TTT CAA AAG ATC
Phe Cys Leu Gly Ala Ser Gly Ala Cys Phe Ser Ile Gly Ile Tyr Leu Ser Val Phe Gln Lys Ile

TAA
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HPC091

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ATG GGT AAT CAT TTT TCT AAA TTA GGA TTT GTT TTA GCC GCA TTA GGG AGC GCG ATA GGT TTA GGG
Met Gly Asn His Phe Ser Lys Leu Gly Phe Val Leu Ala Ala Leu Gly Ser Ala Ile Gly Leu Gly

CAT ATC TGG CGT TTC CCC TAC ATG ACT GGG GTG AGT GGT GGG GGT GCT TTT GTT TTA TTG TTT TTA
His Ile Trp Arg Phe Pro Tyr Met Thr Gly Val Ser Gly Gly Gly Ala Phe Val Leu Leu Phe Leu

TTT TTA TCT TTA AGC GTT GGC GCG GCG ATG TTT ATC GCT GAA ATG CTA TTA GGG CAA AGC ACG CAA
Phe Leu Ser Leu Ser Val Gly Ala Ala Met Phe Ile Ala Glu Met Leu Leu Gly Gln Ser Thr Gln

AAA AAT GTA ATA GAA GCC TTT AAA GAG CTT GAC CTT AAC CCT AAA AAA CGC TGG AAA TAC GCA GGG
Lys Asn Val Ile Glu Ala Phe Lys Glu Leu Asp Leu Asn Pro Lys Lys Arg Trp Lys Tyr Ala Gly

ATT TTG CTT ATT TCT GGG CCA TTA ATA CTG ACT TTT TAC GGC ACG ATT TTA GGC TGG GTG CTT TAT
Ile Leu Leu Ile Ser Gly Pro Leu Ile Leu Thr Phe Tyr Gly Thr Ile Leu Gly Trp Val Leu Tyr

TAT TTG GTG AGT GTT AGT TTT AAT TTG CCT AAC AAT ATC CAA GAA TCT GAA CAA ATT TTT ACT CAA
Tyr Leu Val Ser Val Ser Phe Asn Leu Pro Asn Asn Ile Gln Glu Ser Glu Gln Ile Phe Thr Gln

ACT TTG CAG TCT ATA GGG TTA CAA TCC ATA GGG CTT TTG AGC GTT TTA TTG ATA ACC G
Thr Leu Gln Ser Ile Gly Leu Gln Ser Ile Gly Leu Leu Ser Val Leu Leu Ile Thr
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Figur 15

HPC094

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ATG AAA AAG ATT ATT CTT GCA TGC CTT ATG GCT TTT GTG GGT GCC AAT TTA AGC GCA GAG CCT AAG
Met Lys Lys Ile Ile Leu Ala Cys Leu Met Ala Phe Val Gly Ala Asn Leu Ser Ala Glu Pro Lys

TGG TAT AGC AAG GCC TAT AAC AAA ACA AAC ACC CAA AAA GGC TAT CTT TAT GGG AGT GGT TCA GCC
Trp Tyr Ser Lys Ala Tyr Asn Lys Thr Asn Thr Gln Lys Gly Tyr Leu Tyr Gly Ser Gly Ser Ala

ACT TCT AAA GAG GCT TCT AAA CAA AAA GCG TTA GCG GAT TTA GTG GCG TCT ATT AGC GTG GTG GTT
Thr Ser Lys Glu Ala Ser Lys Gln Lys Ala Leu Ala Asp Leu Val Ala Ser Ile Ser Val Val Val

AAT TCC CAG ATC CAT ATC CAA AAA AGT CGT GTG GAT AAT AAG TTA AAA TCC AGT GAT TCG CAA ACG
Asn Ser Gln Ile His Ile Gln Lys Ser Arg Val Asp Asn Lys Leu Lys Ser Ser Asp Ser Gln Thr

ATT AAC TTA AAA ACC GAT GAC TTG GAA TTG AAT AAT GTA GAA ATT GTC AAT CAA GAA GCG CAA AAA
Ile Asn Leu Lys Thr Asp Asp Leu Glu Leu Asn Asn Val Glu Ile Val Asn Gln Glu Ala Gln Lys

GGG ATC TAC TAC ACC AGA GTA AGG ATT AAT CAA AAC TTG TTT TTG CAG GGT TTA AGG GAT AAG TAT
Gly Ile Tyr Tyr Thr Arg Val Arg Ile Asn Gln Asn Leu Phe Leu Gln Gly Leu Arg Asp Lys Tyr

AAC GCT CTT TAT GGG CAG TTT TCC ACC TTA ATG CCT AAG GTT TGT AAA GGG GTT TTT TTA CAG CAA
Asn Ala Leu Tyr Gly Gln Phe Ser Thr Leu Met Pro Lys Val Cys Lys Gly Val Phe Leu Gln Gln

TCT AAA AGC ATG GGG GAT TTA TTG GCT AAA GCG ATG CCT ATA GAA AGG ATT TTA AAA GCG TAT TCT
Ser Lys Ser Met Gly Asp Leu Leu Ala Lys Ala Met Pro Ile Glu Arg Ile Leu Lys Ala Tyr Ser

GTC CCG GTG AGT TCG TTA GAA AAT TAT GAA AAA ATC TAT TAT CAA AAC GCT TTC AAA CCT AAA GTG
Val Pro Val Ser Ser Leu Glu Asn Tyr Glu Lys Ile Tyr Tyr Gln Asn Ala Phe Lys Pro Lys Val

CAA ATC ACT TTT GAT AAC AAC AGC GAT ACA GAG GAT ACA GAG ATT AAA AAC GCT CTC ATA AGT GCT
Gln Ile Thr Phe Asp Asn Asn Ser Asp Thr Glu Asp Thr Glu Ile Lys Asn Ala Leu Ile Ser Ala

TAT GCC AGA GTG CTA ACC CCT AGC GAT GAA GAA AAA CTC TAT CAA ATC AAA AAT GAA GTT TTC ACA
Tyr Ala Arg Val Leu Thr Pro Ser Asp Glu Glu Lys Leu Tyr Gln Ile Lys Asn Glu Val Phe Thr

GAC AGC GCT AAT GGC ATC ACA CGC ATT AGA GTG GTT GTT AGC GCA AGC GAT TGT CAA GGC ACG CCT
Asp Ser Ala Asn Gly Ile Thr Arg Ile Arg Val Val Val Ser Ala Ser Asp Cys Gln Gly Thr Pro

GTA TTG AAT AGA AGC CTT GAA GTG GAT GAA AAG AAT AAG AAT TTT GCT ATC ACG CGC TTG CAA TCT
Val Leu Asn Arg Ser Leu Glu Val Asp Glu Lys Asn Lys Asn Phe Ala Ile Thr Arg Leu Gln Ser

TTG CTT TAT AAA GAA TTG AAA GAT TAT GCC AAT AAA GAA GGG CAA GGC AAT ACG GGG TTA TAA
Leu Leu Tyr Lys Glu Leu Lys Asp Tyr Ala Asn Lys Glu Gly Gln Gly Asn Thr Gly Leu ---
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Figure 15

HPC095

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ATG GCA TTA AGG GTA TTG TTA TTC TTT TGT TTT TTG TTT TTA CAA GCA GAA GAT AAA AGC CAA GAG
Met Ala Leu Arg Val Leu Leu Phe Phe Cys Phe Leu Phe Leu Gln Ala Glu Asp Lys Ser Gln Glu

CTA TTG TCC ATA CAA AAA CAA ATG GCT TTG GTG GAT AAA AAA CTC GCC AAA GAC GAT AAC GTG TGG
Leu Leu Ser Ile Gln Lys Gln Met Ala Leu Val Asp Lys Lys Leu Ala Lys Asp Asp Asn Val Trp

TTG AAA AAA TTT GAA AAC TAT AAG ATC TAC AAC CAA ATT TAT ACC GAA AAA GAG AGC GTG AGG CAG
Leu Lys Lys Phe Glu Asn Tyr Lys Ile Tyr Asn Gln Ile Tyr Thr Glu Lys Glu Ser Val Arg Gln

GAA TTA AGG CGT TTA AAA AAT AAA AAA AGC AAG GAT TTA TTA AAG ATT AGC ACC TTA GAG CAC ACC
Glu Leu Arg Arg Leu Lys Asn Lys Lys Ser Lys Asp Leu Leu Lys Ile Ser Thr Leu Glu His Thr

TTA AAG GCT TTA GAA TCC CAG CAA AAA ATG TTT GAA AGC TAT GGG GTC AAT CCT TTT AAG GAT TTG
Leu Lys Ala Leu Glu Ser Gln Gln Lys Met Phe Glu Ser Tyr Gly Val Asn Pro Phe Lys Asp Leu

ATA GAG CGC CCC AAT ATC CCC AAT ATC CCT AAT ATC GCT AAC CCT ATT GCA ATC ATT GAT GGC ATT
Ile Glu Arg Pro Asn Ile Pro Asn Ile Pro Asn Ile Ala Asn Pro Ile Ala Ile Ile Asp Gly Ile

TCT TTC ATT AAA AGC ATG CAT TTA AAG CAT GAA AGT CTT AAA AAA AAC CAA ACT TCT TTA GAA GAA
Ser Phe Ile Lys Ser Met His Leu Lys His Glu Ser Leu Lys Lys Asn Gln Thr Ser Leu Glu Glu

GTT TTA AAG CTT CTA GAT CAA AAA CAC CAG CTT TTA AAT GAG TGG CAC GCC TTG GAT AAA AGC GTG
Val Leu Lys Leu Leu Asp Gln Lys His Gln Leu Leu Asn Glu Trp His Ala Leu Asp Lys Ser Val

AAA CTA AGC GAT GAG ATT TAT CAA ACT CAA GCC AAA CGC TTA GAA TTG CAA GGG GCT CAA AAC ATT
Lys Leu Ser Asp Glu Ile Tyr Gln Thr Gln Ala Lys Arg Leu Glu Leu Gln Gly Ala Gln Asn Ile

TTA AAA ACC ACG ATT GGG ATT TTC CAA AAA GAC AGC GAT GAA GCT ATA AGC ATT GTT AAA TCT CAA
Leu Lys Thr Thr Ile Gly Ile Phe Gln Lys Asp Ser Asp Glu Ala Ile Ser Ile Val Lys Ser Gln

GTT AAA AAC CAG CTT TTT AAA TTG ATT TAT GTG TTT TTA GCA GCC CTT TTG AGC GTG GTG TTT GCT
Val Lys Asn Gln Leu Phe Lys Leu Ile Tyr Val Phe Leu Ala Ala Leu Leu Ser Val Val Phe Ala

TGG ATT TTA AAA ATC ATT TCC AGT AAA TAC ATT GAA AAT AAT GAG CGC GTC TAT ACC GTG AAT AAA
Trp Ile Leu Lys Ile Ile Ser Ser Lys Tyr Ile Glu Asn Asn Glu Arg Val Tyr Thr Val Asn Lys

GCC ATT AAC TTC GTG AAT GTG AGC GTG ATC ATT TTA ATC TTT CTT TTT TCT TAT TTA GAG AAT GTT
Ala Ile Asn Phe Val Asn Val Ser Val Ile Ile Leu Ile Phe Leu Phe Ser Tyr Leu Glu Asn Val

ACT TAC TTG GTC ACG GTT TTA GGC TTT GCG AGC GCT GGC TTA GCG ATT GCG ATG AAA GAT TTA TTC
Thr Tyr Leu Val Thr Val Leu Gly Phe Ala Ser Ala Gly Leu Ala Ile Ala Met Lys Asp Leu Phe

ATG AGC TTG CTC GGG TGG TTT ATT ATT TTG ATT GGG GGG AGC GTG CAT GTG GGC GAT AGG GTG CGT
Met Ser Leu Leu Gly Trp Phe Ile Ile Leu Ile Gly Gly Ser Val His Val Gly Asp Arg Val Arg

ATC GCT AAG GGG ACG GAT ATT TTT ATT GGC GAT GTG TTG GAT ATT TCT ATG TTG CAC ATT ACG ATT
Ile Ala Lys Gly Thr Asp Ile Phe Ile Gly Asp Val Leu Asp Ile Ser Met Leu His Ile Thr Ile

TTA GAA GAT GTA ACC TTT ACC ACT TAC ACG AAC AAC AGG AGA GCG GGC CGG ATT ATT TTT GTG CCT
Leu Glu Asp Val Thr Phe Thr Thr Tyr Thr Asn Asn Arg Arg Ala Gly Arg Ile Ile Phe Val Pro

AAT AAT TAT ATT TTC ACC ACC ATG TTT GCT AAT TAC AGC CAT TTT GGG ATG AAA ACG GTT TGG GAT
Asn Asn Tyr Ile Phe Thr Thr Met Phe Ala Asn Tyr Ser His Phe Gly Met Lys Thr Val Trp Asp

GGC GTG GAT TTT TGC GTT ACA TTT GAT TCT GAT TTT AAA AAA GCT TCT AAA ATT GCG CTC AAT ATC
Gly Val Asp Phe Cys Val Thr Phe Asp Ser Asp Phe Lys Lys Ala Ser Lys Ile Ala Leu Asn Ile

GCT ACG GAA TTG TCT AAA GAA TAC ACG GAT ATT ACC TAT AAA CAG CTC AAT AAA ATG CGC GAC CGG
Ala Thr Glu Leu Ser Lys Glu Tyr Thr Asp Ile Thr Tyr Lys Gln Leu Asn Lys Met Arg Asp Arg

TAT TCT TTA AGG AGT TTG AGT GTG AAG CCT CGA TGC TTT TTG ATG CCT GAA AAT AAC GGG ATA AAA
Tyr Ser Leu Arg Ser Leu Ser Val Lys Pro Arg Cys Phe Leu Met Pro Glu Asn Asn Gly Ile Lys

ATC TCG GTG TGG TAT CAA ACC AAT TCG TAT GCG ACC ATG TCT TTA AGG AGC AAG ATT GTG GCT GAA
Ile Ser Val Trp Tyr Gln Thr Asn Ser Tyr Ala Thr Met Ser Leu Arg Ser Lys Ile Val Ala Glu

ATC GTT GAA GCT TTT TTG AAA GAA GAA AAT ATC CAT ATC GCT TAT ACG ACC AGC AAG TTG CTT AAA
Ile Val Glu Ala Phe Leu Lys Glu Glu Asn Ile His Ile Ala Tyr Thr Thr Ser Lys Leu Leu Lys

GTG GAT GCT GAT TTT TTA GGC GAT GGT TTT GGG AAT AAA AGG GAA CAA AAA TGA
Val Asp Ala Asp Phe Leu Gly Asp Gly Phe Gly Asn Lys Arg Glu Gln Lys ---
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Figure 15

HPC099

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ATG CCG GAA AAT TCT AAA CTA CAA CCT GCT AAG TTA GGG AAA AAT TTT GAC CCT GTG GAT CAT TCT
Met Pro Glu Asn Ser Lys Leu Gln Pro Ala Lys Leu Gly Lys Asn Phe Asp Pro Val Asp His Ser

AAC AGG AAT TTT TTC TTT TCT CTC ATT CTG TCT GTA TTG TTA CAC TGG TTG ATT TAT TTT TTA TTT
Asn Arg Asn Phe Phe Phe Ser Leu Ile Leu Ser Val Leu Leu His Trp Leu Ile Tyr Phe Leu Phe

GAA CAC AGA GAA GAT TTT TTT CCT TCA AAA CCC AAG CTT GTT AAA TTA AAT CCT GAA AAT TTA TTG
Glu His Arg Glu Asp Phe Phe Pro Ser Lys Pro Lys Leu Val Lys Leu Asn Pro Glu Asn Leu Leu

GTT TTA AAA AGA GGC CAT TCG CAA GAT CCC AGT AAA AAC ACC CAG GGC GCT CCT AAA CCC ACG CTG
Val Leu Lys Arg Gly His Ser Gln Asp Pro Ser Lys Asn Thr Gln Gly Ala Pro Lys Pro Thr Leu

GCT GGC CCC CAA AAA CCC CCC ACT CCA CCC ACA CCC CCA ATT CCG CCA ACC CCG CCA AAA CCT ATA
Ala Gly Pro Gln Lys Pro Pro Thr Pro Pro Thr Pro Pro Ile Pro Pro Thr Pro Pro Lys Pro Ile

GAA AAG CCT AAA CCT GAG CCT AAA CCT AAG CCA AAA CCA GAA CCC AAA AAG CCC AAC CAC AAA CAT
Glu Lys Pro Lys Pro Glu Pro Lys Pro Lys Pro Lys Pro Glu Pro Lys Lys Pro Asn His Lys His

AAG GCT CTT AAA AAA GTG GAA AAA GTG GAA GAG AAA AAA ATA GTA GAG GAG AAA AAA GAA GAG AAA
Lys Ala Leu Lys Lys Val Glu Lys Val Glu Glu Lys Lys Ile Val Glu Glu Lys Lys Glu Glu Lys

AAA ATC GTA GAG CAG AAA GTA GAA CAA AAA GTA GAG CAG AAA AAA ATA GAA GAG AAA AAA CCT GTC
Lys Ile Val Glu Gln Lys Val Glu Gln Lys Val Glu Gln Lys Lys Ile Glu Glu Lys Lys Pro Val

AAA AAA GAA TTT GAC CCT AAC CAG CTT TCT TTC TTG CCT AAA GAA GTT GCG CCA CCC AGA AAA GAA
Lys Lys Glu Phe Asp Pro Asn Gln Leu Ser Phe Leu Pro Lys Glu Val Ala Pro Pro Arg Lys Glu

AAT AAT AAA GGC TTA GAT AAC CAA ACC AGA AGG GAT ATT GAT GAA TTG TAT GGC GAA GAA TTT GGG
Asn Asn Lys Gly Leu Asp Asn Gln Thr Arg Arg Asp Ile Asp Glu Leu Tyr Gly Glu Glu Phe Gly

GAT TTA GGC ACA GCC GAA AAA GAT TTC ATC AGG AAT AAT TTA AGG GAT ATT GGG CGC ATC ACG CAA
Asp Leu Gly Thr Ala Glu Lys Asp Phe Ile Arg Asn Asn Leu Arg Asp Ile Gly Arg Ile Thr Gln

AAA TAT TTA GAA TAC CCT CAA GTA GCG GCT TAT TTA GGG CAG GAC GGG ACG AAT GCG GTA GAG TTT
Lys Tyr Leu Glu Tyr Pro Gln Val Ala Ala Tyr Leu Gly Gln Asp Gly Thr Asn Ala Val Glu Phe

TAC TTG CAC CCT AAC GGC GAT ATT ACC GAT CTT AAA ATC ATC ATT GGC TCT GAA TAT AAA ATG CTT
Tyr Leu His Pro Asn Gly Asp Ile Thr Asp Leu Lys Ile Ile Ile Gly Ser Glu Tyr Lys Met Leu

GAT GAC AAC ACT TTA AAG ACC ATT CAG ATC GCT TAT AAG GAT TAC CCA CGC CCT AAA ACT AAA ACC
Asp Asp Asn Thr Leu Lys Thr Ile Gln Ile Ala Tyr Lys Asp Tyr Pro Arg Pro Lys Thr Lys Thr

CTC ATT CGC ATC AGA GTG CGT TAT TAC TTG GGA GGC AAT TAA
Leu Ile Arg Ile Arg Val Arg Tyr Tyr Leu Gly Gly Asn ---
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Figure 15

HPC101

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ATG AAA ACA AAC GGG CTT TTT AAA ATG TGG GGG CTG TTT TTA GTT TTA ATC GCT TTA GTC TTT AAC
Met Lys Thr Asn Gly Leu Phe Lys Met Trp Gly Leu Phe Leu Val Leu Ile Ala Leu Val Phe Asn

GCA TGC TCT GAT AGC CAT AAA GAA AAA AAG GAC GCT TTA GAA GTC ATT AAA CAA AGA GGG GTT TTA
Ala Cys Ser Asp Ser His Lys Glu Lys Lys Asp Ala Leu Glu Val Ile Lys Gln Arg Gly Val Leu

AAA GTG GGG GTT TTT AGC GAT AAG CCT CCT TTT GGA TCT GTG GAT TCT AAA GGG AAA TAT CAA GGC
Lys Val Gly Val Phe Ser Asp Lys Pro Pro Phe Gly Ser Val Asp Ser Lys Gly Lys Tyr Gln Gly

TAT GAT GTG ATC ATC GCT AAA CGC ATG GCC CTT GAT TTA TTG GGC GAT GAA AAT AAG ATT GAG TTT
Tyr Asp Val Ile Ile Ala Lys Arg Met Ala Leu Asp Leu Leu Gly Asp Glu Asn Lys Ile Glu Phe

ATT CCC GTA GAA GCT TCA GCT AGG GTG GAA TTT TTA AAA GCC AAT AAA GTG GAT ATT ATC ATG GCT
Ile Pro Val Glu Ala Ser Ala Arg Val Glu Phe Leu Lys Ala Asn Lys Val Asp Ile Ile Met Ala

AAT TTC ACG CGC ACT AAA GAA AGA GAA AAA GTC GTG GAT TTC GCT AAT CCG TAT ATG AAA GTC GCT
Asn Phe Thr Arg Thr Lys Glu Arg Glu Lys Val Val Asp Phe Ala Asn Pro Tyr Met Lys Val Ala

TKG GGG GTG ATT TCT AAA GAT GGG GTC ATT AAA AAT ATA GAA GAG TTG AAG GAT AAA GAG TTG ATT
  ? Gly Val Ile Ser Lys Asp Gly Val Ile Lys Asn Ile Glu Glu Leu Lys Asp Lys Glu Leu Ile

GTG AAT AAA GGC ACG ACA GCG GAW TTT TAT TTC ACT AAA AAT TAC CCC AAT ATC AAA CTT TTG AAA
Val Asn Lys Gly Thr Thr Ala   ? Phe Tyr Phe Thr Lys Asn Tyr Pro Asn Ile Lys Leu Leu Lys

TTT GTA CAA AAC ACA GAG ACT TTT TTA GCC CTT TTA AAT AAT AAG GCC ACC GCT CTA GCC CAT GAC
Phe Val Gln Asn Thr Glu Thr Phe Leu Ala Leu Leu Asn Asn Lys Ala Thr Ala Leu Ala His Asp

AAC ACT TTA TTG CTC GCT TGG GCG AAA CAA CAC CCT GAA TTT AAA TTA GGC ATT ACA AGC CTT GGC
Asn Thr Leu Leu Leu Ala Trp Ala Lys Gln His Pro Glu Phe Lys Leu Gly Ile Thr Ser Leu Gly

GAT AAA GAT GTG ATC GCT CCA GCG ATT AAA AAA GGC AAC CCT AAG CTT TTA GAA TGG TTG AAT AAC
Asp Lys Asp Val Ile Ala Pro Ala Ile Lys Lys Gly Asn Pro Lys Leu Leu Glu Trp Leu Asn Asn

GAG ATT GAT TCC CTC ATT TCT AGC GAC TTT TTA AAA GAA GCT TAT CAA GAA ACT TTA GAG CCT GTT
Glu Ile Asp Ser Leu Ile Ser Ser Asp Phe Leu Lys Glu Ala Tyr Gln Glu Thr Leu Glu Pro Val

TAT GGC GAT GAA ATC AAA CC
Tyr Gly Asp Glu Ile Lys
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Figure 15

HPC107

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ATG AAA AAC ACC AAT ACA AAA GAG ATA AAG AAT ACA AGA ATG GAA AAA GGT TAT AGT CAA TAC CAC
Met Lys Asn Thr Asn Thr Lys Glu Ile Lys Asn Thr Arg Met Glu Lys Gly Tyr Ser Gln Tyr His

GCA CTC AAA AAA GGG CTT TTA AAA ACC GCT TTG CTT TTT AGC CTT CCT TTA AGC ATG GCG TTA GCT
Ala Leu Lys Lys Gly Leu Leu Lys Thr Ala Leu Leu Phe Ser Leu Pro Leu Ser Met Ala Leu Ala

GAA GAC GAT GGC TTT TAT ATG GGA GTG GGC TAT CAA ATC GGC GGT GCG CAA CAA AAT ATC AAT AAC
Glu Asp Asp Gly Phe Tyr Met Gly Val Gly Tyr Gln Ile Gly Gly Ala Gln Gln Asn Ile Asn Asn

AAA GGC AGC ACC CTA AGG AAT AAT GTC ATT GAT GAT TTC CGC CAA GTG GGC GTG GGT ATG GCA GGG
Lys Gly Ser Thr Leu Arg Asn Asn Val Ile Asp Asp Phe Arg Gln Val Gly Val Gly Met Ala Gly

GGT AAT GGG CTT TTA GCC TTA GCG ACA AAC ACG ACC ATG GAC GCT CTT TTA GGG ATA GGC AAT CAA
Gly Asn Gly Leu Leu Ala Leu Ala Thr Asn Thr Thr Met Asp Ala Leu Leu Gly Ile Gly Asn Gln

ATT TTC AAT ACT AAT ACA ACT GTT GGC AAC AAC AAC GCA GAA TTA ACC CAG TTT AAA AAA ATA CTC
Ile Phe Asn Thr Asn Thr Thr Val Gly Asn Asn Asn Ala Glu Leu Thr Gln Phe Lys Lys Ile Leu

CCC CAA ATT GAG CAA CGC TTT GAA GCG AAT AAA AAC GCT TAT AGC GTT CAA GCC TTG CAA GTG TAT
Pro Gln Ile Glu Gln Arg Phe Glu Ala Asn Lys Asn Ala Tyr Ser Val Gln Ala Leu Gln Val Tyr

TTG AGT AAT GTG CTT TAT AAC TTG GTT AAT AAT AGT AAT AAT GGC AGC AAT AAT GGA GTC GTT CCT
Leu Ser Asn Val Leu Tyr Asn Leu Val Asn Asn Ser Asn Asn Gly Ser Asn Asn Gly Val Val Pro

GAA TAT GTA GGG ATT ATA AAA GTT CTC TAT GGT TCT CAA AAT GAA TTC AGT CTC TTA GCC ACG GAG
Glu Tyr Val Gly Ile Ile Lys Val Leu Tyr Gly Ser Gln Asn Glu Phe Ser Leu Leu Ala Thr Glu

AGT GTG GCG CTT CTA AAC GCG CTT ACA AGG GTG AAT CTG GAT AGC AAT TCG GTG TTT TTA AAA GGG
Ser Val Ala Leu Leu Asn Ala Leu Thr Arg Val Asn Leu Asp Ser Asn Ser Val Phe Leu Lys Gly

CWA TTA GCC CAA ATG CAG CTT TTT AAT GAC ACT TCT GCA GCA AAG CTA GGC CAG ATC GCA GAA AGC
  ? Leu Ala Gln Met Gln Leu Phe Asn Asp Thr Ser Ala Ala Lys Leu Gly Gln Ile Ala Glu Ser

TTG AAT AAG AGC GGT GGT GCA GGG GCC ATG CTT CAA AAG GAT GTG AAA ACC ATC TCG GAT CGA ATC
Leu Asn Lys Ser Gly Gly Ala Gly Ala Met Leu Gln Lys Asp Val Lys Thr Ile Ser Asp Arg Ile

GCT ACT TAC CAA GAG AAT CTA AAA CAG CTA GGA GGG ATG CTA AAG AAT TAC GAT GAG CCA TAC CTA
Ala Thr Tyr Gln Glu Asn Leu Lys Gln Leu Gly Gly Met Leu Lys Asn Tyr Asp Glu Pro Tyr Leu

CCC CAA TTT GGG CMA GGC ACA AGC TCT CAG CAT GGG GTT ATT AAT GGC TTT GGC ATT CAA ATG GGC
Pro Gln Phe Gly   ? Gly Thr Ser Ser Gln His Gly Val Ile Asn Gly Phe Gly Ile Gln Met Gly

TAT AAG CAA TTT TTT GGG AAC AAG AGG AAT ATA GGC TTA CGG TAT TAC GCT TTC TTT GAT TAC GGC
Tyr Lys Gln Phe Phe Gly Asn Lys Arg Asn Ile Gly Leu Arg Tyr Tyr Ala Phe Phe Asp Tyr Gly

TTT ACG CAA TTG GGC AGT CTT AGC AGC GCT GTT AAA GCG AAC ATC TTT ACT TAT GGT GCT GGC ACG
Phe Thr Gln Leu Gly Ser Leu Ser Ser Ala Val Lys Ala Asn Ile Phe Thr Tyr Gly Ala Gly Thr

GAC TTT TTA TGG AAT ATC TTT AGA AGG GTT TTT AGC GAT CAG TCC TTG AAT GTG GGG GTG TTT GGA
Asp Phe Leu Trp Asn Ile Phe Arg Arg Val Phe Ser Asp Gln Ser Leu Asn Val Gly Val Phe Gly

GGC ATT CAA ATA GCG GGT AAC ACT TGG GAT AGC TCT TTA AGA GGT CAA ATT GAG AAT TCG TTT AAA
Gly Ile Gln Ile Ala Gly Asn Thr Trp Asp Ser Ser Leu Arg Gly Gln Ile Glu Asn Ser Phe Lys

GAA TAC CCC ACT CCC ACA AAT TTC CAA TTT TTA TTT AAT TTG GGC TTA AGG GCT CAT TTT GCC AGC
Glu Tyr Pro Thr Pro Thr Asn Phe Gln Phe Leu Phe Asn Leu Gly Leu Arg Ala His Phe Ala Ser

ACC ATG CAC CGC CG
Thr Met His Arg
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Figure 15

HPC110

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TTT ACA AAG ATT ATG AAG AGA GTT AGA GGG CTT GTG AAA AAA CAC CCC AAG AAA AGC AAG GCG GCA
Phe Thr Lys Ile Met Lys Arg Val Arg Gly Leu Val Lys Lys His Pro Lys Lys Ser Lys Ala Ala

TTA GTA GTA TTG ACC CAT GTT GCG TGC AAG AAA GCG AAA GAA TTG GAC GAT AAA GTC CAG GAT AAA
Leu Val Val Leu Thr His Val Ala Cys Lys Lys Ala Lys Glu Leu Asp Asp Lys Val Gln Asp Lys

TCC AAA CAA GCT GAA AAA GAA AAT CAA ATC AAT TGG TGG AAA TAT TCA GGA TTA ACA ATA GCG ACA
Ser Lys Gln Ala Glu Lys Glu Asn Gln Ile Asn Trp Trp Lys Tyr Ser Gly Leu Thr Ile Ala Thr

AGT TTA TTA TTA GCC GCT TGT AGT GCT GGT GAT ATT GAT AAA CAA ATA GAG TTA GAA CAA GAA AAA
Ser Leu Leu Leu Ala Ala Cys Ser Ala Gly Asp Ile Asp Lys Gln Ile Glu Leu Glu Gln Glu Lys

CAA AAG ACA GAA CAA GAA CAA CAG AAA ACA GAA CAA GAA AGA CAA AAA
Gln Lys Thr Glu Gln Glu Gln Gln Lys Thr Glu Gln Glu Arg Gln Lys
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HPC117

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ATG CCA TAC GCC TTA AGA AAA AGA TTT TTC AAA CGC CTT GCG CTG ATT GTT TCC ACT TTT TGC GCG
Met Pro Tyr Ala Leu Arg Lys Arg Phe Phe Lys Arg Leu Ala Leu Ile Val Ser Thr Phe Cys Ala

ATA AGC TTG AAC GCT AAA AGC TAT CTG TTT TCC CCC TTG CCC CCA GCG CAC CAA CAA ATC ATT AAG
Ile Ser Leu Asn Ala Lys Ser Tyr Leu Phe Ser Pro Leu Pro Pro Ala His Gln Gln Ile Ile Lys

ACA GAG CCT TGC TCT TTG GAA TGC TTG AAA GAC TTG ATG TTG CAA AAT CAA ATC TTT TCT TTT GTT
Thr Glu Pro Cys Ser Leu Glu Cys Leu Lys Asp Leu Met Leu Gln Asn Gln Ile Phe Ser Phe Val

TCT CAA TAC GAT AAC AAC AAC CAA GAT GAG AGC CTT AAA ACT TAT TAT CAT GAC ATA CTC AAT AAA
Ser Gln Tyr Asp Asn Asn Asn Gln Asp Glu Ser Leu Lys Thr Tyr Tyr His Asp Ile Leu Asn Lys

CTC AAC CCT GCA TTC ATC GCT TCT CAA ACT CCA GCT AAA GAC AGC TAT GAG CCT AAG ATT GAA TTA
Leu Asn Pro Ala Phe Ile Ala Ser Gln Thr Pro Ala Lys Asp Ser Tyr Glu Pro Lys Ile Glu Leu

GCG GTT TTA CTG CCT AAA AAG GTG GTG GGG CGT TAT GCC ATT TCG GTG ATG AAC ACC CTT TTA GCG
Ala Val Leu Leu Pro Lys Lys Val Val Gly Arg Tyr Ala Ile Ser Val Met Asn Thr Leu Leu Ala

TAT TTG AAC ACC AGA AAC AAC GAT TTC AAT ATC CAA GTC TTT GAC AGC GAT GAA GAG AGT CCT GAA
Tyr Leu Asn Thr Arg Asn Asn Asp Phe Asn Ile Gln Val Phe Asp Ser Asp Glu Glu Ser Pro Glu

AAA TTA GAG CAA ACC TAT AAA GAA ATT GAA AAA GAA AAA TTC CCT TTT GTG ATA GCC TTA TTA ACC
Lys Leu Glu Gln Thr Tyr Lys Glu Ile Glu Lys Glu Lys Phe Pro Phe Val Ile Ala Leu Leu Thr

AAA GAG GGC GTG GAA AAT TTG CTC CAA AAC ACC ACG ATT AGC ACC CCT ACT TAT GTG CCT ACG GTG
Lys Glu Gly Val Glu Asn Leu Leu Gln Asn Thr Thr Ile Ser Thr Pro Thr Tyr Val Pro Thr Val

AAT AGA ACG CAA TTA GAA AAT CAA ACT GAG CGT TCT TTA AGC GAG CGC TTG TAT TTT GGG GGG ATT
Asn Arg Thr Gln Leu Glu Asn Gln Thr Glu Arg Ser Leu Ser Glu Arg Leu Tyr Phe Gly Gly Ile

GAC TAT AAA GAG CAA TTA AGC ATG CTC ACG GCT TTC ATT AGC CCT AAT TCG CCC GTG ATT GAA TAC
Asp Tyr Lys Glu Gln Leu Ser Met Leu Thr Ala Phe Ile Ser Pro Asn Ser Pro Val Ile Glu Tyr

GAT GAT GAT GGC CTA ATA GGA GAA CGC TTG AGG CAA ATC ACG GAG TCT TTA AGC ATT GAA GTC AAA
Asp Asp Asp Gly Leu Ile Gly Glu Arg Leu Arg Gln Ile Thr Glu Ser Leu Ser Ile Glu Val Lys

CAC CAA GAA AAT ATT TCT TAC AAA CAA GCC ACC AGT TTT TCT AAA AAT TTT AGA AAA AAC GAT GCG
His Gln Glu Asn Ile Ser Tyr Lys Gln Ala Thr Ser Phe Ser Lys Asn Phe Arg Lys Asn Asp Ala

TTT TTT AAA AAT TCT ATT TTG ATT TTA AAC ACC CCT ACC ACT AAA AGC GGC CTT ATC CTT TCT CAA
Phe Phe Lys Asn Ser Ile Leu Ile Leu Asn Thr Pro Thr Thr Lys Ser Gly Leu Ile Leu Ser Gln

ATA GGG CTT TTA GAA TAC AAG CCC TTT AAA ATC CTT TCC ACA CAA ATC AAT TTC AAC CTC TCT TTA
Ile Gly Leu Leu Glu Tyr Lys Pro Phe Lys Ile Leu Ser Thr Gln Ile Asn Phe Asn Leu Ser Leu

CTC TTA CTC ACC CAG CCT AAA GAC AGA AAG AAT TTA TTC ATC GTC AAT GCC TTG CAA AAT AGC GAT
Leu Leu Leu Thr Gln Pro Lys Asp Arg Lys Asn Leu Phe Ile Val Asn Ala Leu Gln Asn Ser Asp

GAA ACG CTT ATA GAA TAC GCC TCC TTA TTG GAG AGC GAT TTA AGG CAT GAT TGG GTG AAT TAT TCC
Glu Thr Leu Ile Glu Tyr Ala Ser Leu Leu Glu Ser Asp Leu Arg His Asp Trp Val Asn Tyr Ser

AGT GCA ATT GGG CTA GAG GTG TTT TTA AAC ACA CTA GAT CCG CAT TTT AAA AAA TCT TTT CAA GAA
Ser Ala Ile Gly Leu Glu Val Phe Leu Asn Thr Leu Asp Pro His Phe Lys Lys Ser Phe Gln Glu

AGT TTA GAA GAC AAT CAA GTC CGT TAC CAC AAT CAA ATT TAT CAG GCT TTA GGG TAT TCT TTT GAG
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Figure 15

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Ser Leu Glu Asp Asn Gln Val Arg Tyr His Asn Gln Ile Tyr Gln Ala Leu Gly Tyr Ser Phe Glu

CCG ATA AAA AAT GAA AGC GGA ACA AAA AAA GAA TAA
Pro Ile Lys Asn Glu Ser Gly Thr Lys Lys Glu ---
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HPC129

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ATG TCA AAT AGC ATG TTG GAT AAA AAT AAA GCG ATT CTT ACA GGG GGT GGG GCT TTA TTA TTA GGG
Met Ser Asn Ser Met Leu Asp Lys Asn Lys Ala Ile Leu Thr Gly Gly Gly Ala Leu Leu Leu Gly

CTA ATC GTG CTT TTT TAT TTA GCT TAT CGC CCT AAG GCT GAA GTG CTG CAA GGG TTT TTG GAA GCC
Leu Ile Val Leu Phe Tyr Leu Ala Tyr Arg Pro Lys Ala Glu Val Leu Gln Gly Phe Leu Glu Ala

AGA GAA TAC AGC GTG AGT TCC AAA GTC CCT GGC CGC ATT GAA AAG GTG TTT GTT AAA AAA GGC GAT
Arg Glu Tyr Ser Val Ser Ser Lys Val Pro Gly Arg Ile Glu Lys Val Phe Val Lys Lys Gly Asp

CGC ATT AAA AAG GGC GAT TTG GTT TTT AGC ATT TCT AGC CCT GAA TTA GAA GCC AAA CTC GCT CAA
Arg Ile Lys Lys Gly Asp Leu Val Phe Ser Ile Ser Ser Pro Glu Leu Glu Ala Lys Leu Ala Gln

GCT GAA GCC GGG CAT AAA GCC GCT AAA GCG CTT AGC GAT GAA GTC AAA AGA GGC TCA AGA GAC GAA
Ala Glu Ala Gly His Lys Ala Ala Lys Ala Leu Ser Asp Glu Val Lys Arg Gly Ser Arg Asp Glu

ACG ATC AAT TCT GCA AGA GAT GTT TGG CAA GCG GCA AAA TCC CAA GCG ACT CTA GCC AAA GAG ACT
Thr Ile Asn Ser Ala Arg Asp Val Trp Gln Ala Ala Lys Ser Gln Ala Thr Leu Ala Lys Glu Thr

TAT AAG CGC GTT CAA GAT TTG TAT GAT AAC GGC GTG GCG AGC TTG CAA AAG CGC GAT AAA GCC TAT
Tyr Lys Arg Val Gln Asp Leu Tyr Asp Asn Gly Val Ala Ser Leu Gln Lys Arg Asp Lys Ala Tyr

GCA GCT TAT
Ala Ala Tyr
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HPC132

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ATG AAA ATT TTA AGT TTA TGG TTA GGG GTG TTT TGT TTC CTT AAG GCT ACG CCT TAT TTA TAC TTG
Met Lys Ile Leu Ser Leu Trp Leu Gly Val Phe Cys Phe Leu Lys Ala Thr Pro Tyr Leu Tyr Leu

GGC GAA GAG CCT AAA TAT AAG GAG AAT TTC ACG CAT TTT GAA TAC GCT AAC CCT AAC GCT AGA AAG
Gly Glu Glu Pro Lys Tyr Lys Glu Asn Phe Thr His Phe Glu Tyr Ala Asn Pro Asn Ala Arg Lys

GGC GGT GTT TTG AGG AAT GAC GCC ATA GGG ACT TTT GAT AGC CTT AAC CCT TGA
Gly Gly Val Leu Arg Asn Asp Ala Ile Gly Thr Phe Asp Ser Leu Asn Pro ---
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Figure 15

HPC137

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ATG AAA ACT TAT TTA TAT AAC CAT TTT TTA TTT TTC TGC TTT ATT CTG GGA GCG TTT TTA TTA GGT
Met Lys Thr Tyr Leu Tyr Asn His Phe Leu Phe Phe Cys Phe Ile Leu Gly Ala Phe Leu Leu Gly

TTG CTT AGT CCA GCT TAT GCT TTG AGT GTT ATC ACC ACT AAA GAA ATT AAC GCT AAT TTG CCT AAT
Leu Leu Ser Pro Ala Tyr Ala Leu Ser Val Ile Thr Thr Lys Glu Ile Asn Ala Asn Leu Pro Asn

GGA GCG ATA GAA AGC AGG GTG GTG TTA GGC AAG AGG GTG TTT AAA GTA GAA GCT CAT GGG TTT TAT
Gly Ala Ile Glu Ser Arg Val Val Leu Gly Lys Arg Val Phe Lys Val Glu Ala His Gly Phe Tyr

TTT AGA AAC AAC GCA ACT AAC AGC ATA GAC ATA GAA ATC ACC AGT CTT TTA AGA GAC AAT CAA TCG
Phe Arg Asn Asn Ala Thr Asn Ser Ile Asp Ile Glu Ile Thr Ser Leu Leu Arg Asp Asn Gln Ser

TTT CCT TTG ACT AGC CCT GCT AAA ACC AGT TTA AAA ATA CCT TCT AAC GCC AAG ATT AAA AAA TCC
Phe Pro Leu Thr Ser Pro Ala Lys Thr Ser Leu Lys Ile Pro Ser Asn Ala Lys Ile Lys Lys Ser

ACT CTC CTT GTT TTA AAG GGC GAG AAT GCT GAA GAA GTG GCT AAG ATT TTA GGC ATT AGC AAA GAA
Thr Leu Leu Val Leu Lys Gly Glu Asn Ala Glu Glu Val Ala Lys Ile Leu Gly Ile Ser Lys Glu

GAA TAC CAA AAG CTA GAA AAC ACC GCT CAA ACC AAC GCT ACC AAT GAC CCT ATG TAT GCC AAC ACG
Glu Tyr Gln Lys Leu Glu Asn Thr Ala Gln Thr Asn Ala Thr Asn Asp Pro Met Tyr Ala Asn Thr

CCT TTT AGT AAT GGC TCT GAT AGT TCC GCT TAC GAT AAC AAT CCT AAT AGC CCT AAC AAT AAC GCT
Pro Phe Ser Asn Gly Ser Asp Ser Ser Ala Tyr Asp Asn Asn Pro Asn Ser Pro Asn Asn Asn Ala

ATC AAT GGT AAA GAT GGC GCA AAT GGG AGT AAT GGC TAT GGG GTA AAT GGC AAC GAT GGG ATA AAT
Ile Asn Gly Lys Asp Gly Ala Asn Gly Ser Asn Gly Tyr Gly Val Asn Gly Asn Asp Gly Ile Asn

GGG AGC AGT GGG AGT AAT GGA AAT AAT TCA AAT AAT AAT GCC GTG GGC AGT GGT ATT GAT ACA GAT
Gly Ser Ser Gly Ser Asn Gly Asn Asn Ser Asn Asn Asn Ala Val Gly Ser Gly Ile Asp Thr Asp

GGC GTG TTG GGT GTG GAT GGA GTG AAT GGA TCT AAC TCT TCA AGC GGT GGC TCT GTA GGG GGT TAT
Gly Val Leu Gly Val Asp Gly Val Asn Gly Ser Asn Ser Ser Ser Gly Gly Ser Val Gly Gly Tyr

GAG AAT AAT TTC ACT AAT CAT GGC TCT ACT AGC AAT AAC ACA GGA GGG TAT GAC AAT TTT AAT AAT
Glu Asn Asn Phe Thr Asn His Gly Ser Thr Ser Asn Asn Thr Gly Gly Tyr Asp Asn Phe Asn Asn

AAT AGC TCA AGT GGT GGG GGG TTA GGG AAT GGG GGG CTT TTC CCT ATT CCT TTT GGT AAT GGT GGC
Asn Ser Ser Ser Gly Gly Gly Leu Gly Asn Gly Gly Leu Phe Pro Ile Pro Phe Gly Asn Gly Gly

ACA AAC AAT TCC AAT AAT CCT ACT AAC ACC ACT AGC CCA ACT AAT GGC AGT AGT TCC AAT AGC GCC
Thr Asn Asn Ser Asn Asn Pro Thr Asn Thr Thr Ser Pro Thr Asn Gly Ser Ser Ser Asn Ser Ala

ACT AAT CCT AAC TCG CAA GAA AAC AAT TAC TCC AGC CAG TAT TGT AAA GCG CCC AAR TTA AGC CCT
Thr Asn Pro Asn Ser Gln Glu Asn Asn Tyr Ser Ser Gln Tyr Cys Lys Ala Pro  ? Leu Ser Pro

AAC AAC ACG ATG AAA CTA GAT GTT ATC GCT AAA GAT GGC TCT TGT ATT TCT ATG AAC GCT TTA AGA
Asn Asn Thr Met Lys Leu Asp Val Ile Ala Lys Asp Gly Ser Cys Ile Ser Met Asn Ala Leu Arg

GAT GAC ACT AAA TGT GCT TAT AGA TAC GAT TTT GAA GCC G
Asp Asp Thr Lys Cys Ala Tyr Arg Tyr Asp Phe Glu Ala
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Figure 15

HPC149

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TTG TCT AAA GGT TTG AGT ATC GGT AAT AAA ATC ATA TTG TGG GTG GCG TTG ATT GTG ATC GTG TGC
Met Ser Lys Gly Leu Ser Ile Gly Asn Lys Ile Ile Leu Trp Val Ala Leu Ile Val Ile Val Cys

GTG AGC ATT TTA GGG GTG TCC TTG AAC AGC AGG GTG AAA GAG ATT TTA AAA GAA AGC GCT CTG CAT
Val Ser Ile Leu Gly Val Ser Leu Asn Ser Arg Val Lys Glu Ile Leu Lys Glu Ser Ala Leu His

TCT ATG CAA GAT AGT TTG CAT TTC AAG GTT AAG GAA GTG CAA GGG GTT CTT GAA AAC ACT TAT ACG
Ser Met Gln Asp Ser Leu His Phe Lys Val Lys Glu Val Gln Gly Val Leu Glu Asn Thr Tyr Thr

AGC ATG GGC ATT GTC AAA GAA ATG CTC CCT AAA GAC ACC AAA AGA GAA ATC AAA ATC CGC TTG TTG
Ser Met Gly Ile Val Lys Glu Met Leu Pro Lys Asp Thr Lys Arg Glu Ile Lys Ile Arg Leu Leu

AAA AAC TTC ATT TTA GCC AAT TCG CAT GTC GCT GGG GCG AGC GTG TTT TTT AAA GAC AGA GAA GAT
Lys Asn Phe Ile Leu Ala Asn Ser His Val Ala Gly Ala Ser Val Phe Phe Lys Asp Arg Glu Asp

TTA GGA TTA ACG CTT TTA AGG GAT AAC GAT ACG ATT AAA GTG ATG GAA AAC CCG TCA TTA GGG AAT
Leu Gly Leu Thr Leu Leu Arg Asp Asn Asp Thr Ile Lys Val Met Glu Asn Pro Ser Leu Gly Asn

AAC CCT TTA GCG CAA AAA GCG ATG AAA AAT AAA GAA ATT TCT AAA AGC TTG CCT TAT TAT AGG AAA
Asn Pro Leu Ala Gln Lys Ala Met Lys Asn Lys Glu Ile Ser Lys Ser Leu Pro Tyr Tyr Arg Lys

ATG CCT AAT GGG GCG GAA GTT TAT GGG GTT GAT ATT CTT TTA CCT TTA TTG AAT GAG AAC GCT CAA
Met Pro Asn Gly Ala Glu Val Tyr Gly Val Asp Ile Leu Leu Pro Leu Leu Asn Glu Asn Ala Gln

GAG GTT GTA GGG GCT TTG ATG GTT TTT CTT TCC ATT GAC AGC TTC AGC AAT GAA ATC ACT AAA AAC
Glu Val Val Gly Ala Leu Met Val Phe Leu Ser Ile Asp Ser Phe Ser Asn Glu Ile Thr Lys Asn

AGG AGC GAT TTG TTT TTA ATT GGT GTT AAG GGT AAA GTG CTT TTG AGC GCG AAT AAG AGT TTG CAA
Arg Ser Asp Leu Phe Leu Ile Gly Val Lys Gly Lys Val Leu Leu Ser Ala Asn Lys Ser Leu Gln

GAC AAA TCT ATC GCA GAA ATT TAT AAG AGC GTG CCT AAA GCC ACC AAC GAA GTG CTG GCT ATT TTA
Asp Lys Ser Ile Ala Glu Ile Tyr Lys Ser Val Pro Lys Ala Thr Asn Glu Val Leu Ala Ile Leu

GAA AAC GGC TCT AAA GCG ACT TTA GAA TAT TTG GAT CCC TTT AGC CAT AAG GAA AAT TTC TTA GCC
Glu Asn Gly Ser Lys Ala Thr Leu Glu Tyr Leu Asp Pro Phe Ser His Lys Glu Asn Phe Leu Ala

GTT GAA CCC TTT AAA ATG CTA GGC AAA ACA GAA AGT AAA GAC AWT CTT AAT TGG ATG ATC GCT TTA
Val Glu Pro Phe Lys Met Leu Gly Lys Thr Glu Ser Lys Asp  ? Leu Asn Trp Met Ile Ala Leu

ATC ATT GAA AAA GAC AAG GTC TAT GAG CAA GTG GGC TCG GTG CGT TTT GTG GTG ATC ATA GCG AGC
Ile Ile Glu Lys Asp Lys Val Tyr Glu Gln Val Gly Ser Val Arg Phe Val Val Ile Ile Ala Ser

GCG ATC ATG GTG TTA GCC TTG ATT ATA GCG ATC ACT CTT TTA ATG CGA GCG ATT GTG AGC AAT CGT
Ala Ile Met Val Leu Ala Leu Ile Ile Ala Ile Thr Leu Leu Met Arg Ala Ile Val Ser Asn Arg

TTG GAA GCC GTT TCT AGC ACC TTG TCT CAT TTC TTT AAA TTA TTG AAC AAT CAA GCC CAT TCT AGC
Leu Glu Ala Val Ser Ser Thr Leu Ser His Phe Phe Lys Leu Leu Asn Asn Gln Ala His Ser Ser

GAT ATT AAA TTG ATT GAA GCA AAA TCC AAT GAC GAA TTA GGG CGC ATG CAA ACA GCG ATC AAT AAA
Asp Ile Lys Leu Ile Glu Ala Lys Ser Asn Asp Glu Leu Gly Arg Met Gln Thr Ala Ile Asn Lys

AAT ATC TTG CAA ACC CAA AAA ACC ATG CAA GAA GAC AGG CAA GCC GTC CAA GAC ACC ATT AAA GTG
Asn Ile Leu Gln Thr Gln Lys Thr Met Gln Glu Asp Arg Gln Ala Val Gln Asp Thr Ile Lys Val

GTT TCA GAC GTG AAA GCA GGG AAT TTT GCG GTG CGC ATC ACA GCT GAT CCC GCA AGC CCT GAT TTG
Val Ser Asp Val Lys Ala Gly Asn Phe Ala Val Arg Ile Thr Ala Asp Pro Ala Ser Pro Asp Leu

AAA GAA TTG AGG GAC GCG CTA AAT GGG ATC ATG GAT TAT TTG CAA GAA AGC GTA GGG ACT CAC ATG
Lys Glu Leu Arg Asp Ala Leu Asn Gly Ile Met Asp Tyr Leu Gln Glu Ser Val Gly Thr His Met

CCA AGC ATT TTC AAA ATC TTT GAA AGC TAT TCT GGT TTG GAT TTT AGA GGC CGA ATC CAA AAC GCT
Pro Ser Ile Phe Lys Ile Phe Glu Ser Tyr Ser Gly Leu Asp Phe Arg Gly Arg Ile Gln Asn Ala

TCG GGT AGG GTG GAA TTG GTT ACT AAC GCT TTA GGG CAA GAA ATC CAA AAA ATG CTA GAA ACT TCG
Ser Gly Arg Val Glu Leu Val Thr Asn Ala Leu Gly Gln Glu Ile Gln Lys Met Leu Glu Thr Ser

TCT AAT TTT GCC AAA GAT TTA GCG AAC GAT AGC GCG AAT TTA AAA GAA TGC GTG CAA AAT TTA GAA
Ser Asn Phe Ala Lys Asp Leu Ala Asn Asp Ser Ala Asn Leu Lys Glu Cys Val Gln Asn Leu Glu

AAG GCT TCA AAC TCC CAA CAC AAA AGC TTG ATG GAA ACT TCT AAA ACG ATA GAG AAT ATC ACC ACT
Lys Ala Ser Asn Ser Gln His Lys Ser Leu Met Glu Thr Ser Lys Thr Ile Glu Asn Ile Thr Thr
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Figure 15

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TCC ATT CAA GGC GTG AGC TCT CAA AGT GAA GCC ATG ATT GAA CAA GGG CAA GAC ATT AAA AGC ATT
Ser Ile Gln Gly Val Ser Ser Gln Ser Glu Ala Met Ile Glu Gln Gly Gln Asp Ile Lys Ser Ile

GTA GAA ATC ATT AGA GAC ATC GCT GAT CAA ACC AAT CTA TTA GCC CTA AAC GCC GCT ATT GAA GCC
Val Glu Ile Ile Arg Asp Ile Ala Asp Gln Thr Asn Leu Leu Ala Leu Asn Ala Ala Ile Glu Ala

GCA AGG
Ala Arg
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HPC161

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GTG GCG GTG AAA AAA ATC GTT GTG GGT TGG TGT GTG GCG TTG GCT TTT TTA AGC GCA AAT CCA GCG
Met Ala Val Lys Lys Ile Val Val Gly Trp Cys Val Ala Leu Ala Phe Leu Ser Ala Asn Pro Ala

CAA GCC GAT AAA GCG ATC AGT AAT GCG GAT TTG ATT AAA GAA ATA AGG GAC TTA AAA AAA ATC ATC
Gln Ala Asp Lys Ala Ile Ser Asn Ala Asp Leu Ile Lys Glu Ile Arg Asp Leu Lys Lys Ile Ile

AGC GCG CAA AAC ACT GAG ATC AAC AAT TTA AGA AGA GTG CAA GAA GTC TTG TCT GGG CAA TTA GGG
Ser Ala Gln Asn Thr Glu Ile Asn Asn Leu Arg Arg Val Gln Glu Val Leu Ser Gly Gln Leu Gly

GAT ATG CGT AAG GAT ATA TTA AGC ACT AGA GAT TAT TGC ATT AGC TTA AGG CCT TAT ATC TAT AAT
Asp Met Arg Lys Asp Ile Leu Ser Thr Arg Asp Tyr Cys Ile Ser Leu Arg Pro Tyr Ile Tyr Asn

TGG CGC TAG
Trp Arg ---
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HPC169

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ATG GTA TTT GAC AGA ACA ATC AGC GTA AGA GAA AAA AAA GCG GCT AAA ACG CTT GGG ATT GTG GGG
Met Val Phe Asp Arg Thr Ile Ser Val Arg Glu Lys Lys Ala Ala Lys Thr Leu Gly Ile Val Gly

ATC GTC TTT TTT ATT TTG TTT GGC ATC GTA ATA AGC GGG GTG GCT TTT CAA AAA GAG TGG GTG CAA
Ile Val Phe Phe Ile Leu Phe Gly Ile Val Ile Ser Gly Val Ala Phe Gln Lys Glu Trp Val Gln

CAA TTG GAT TTA TTT TTT ATA GAC TTG ATC CAC AAC CCT GCC CCC ATT CAA
Gln Leu Asp Leu Phe Phe Ile Asp Leu Ile His Asn Pro Ala Pro Ile Gln
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HPC172

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CGA TAT GAT AAA GGG TTT GAA AAA GAT AAA AAA GAT CTA GAA TAT TAT TCT AAA GCT TGC GAG TTA
Arg Tyr Asp Lys Gly Phe Glu Lys Asp Lys Lys Asp Leu Glu Tyr Tyr Ser Lys Ala Cys Glu Leu

AAC TAT GGC GAT GGC TGT GCG ATT TTA GGG GAT ATT TAT CGT AAT GGT GAA GGC GTA ACA CAA AAT
Asn Tyr Gly Asp Gly Cys Ala Ile Leu Gly Asp Ile Tyr Arg Asn Gly Glu Gly Val Thr Gln Asn

TTT AAA AAA GCT TTC AAA TAT TAC TCT AAA GCT TGC GAA TTA AAT AAT GGT GAA GGG TGT TCC AAA
Phe Lys Lys Ala Phe Lys Tyr Tyr Ser Lys Ala Cys Glu Leu Asn Asn Gly Glu Gly Cys Ser Lys

TTA GGA GGG GAT TAT TTT TTT GGT GAA AGC GTA ACG CAA GAT CTT AAA AAA GCT TTT GGA TAT TAC
Leu Gly Gly Asp Tyr Phe Phe Gly Glu Ser Val Thr Gln Asp Leu Lys Lys Ala Phe Gly Tyr Tyr

TCT AAA GCT TGC GAA TTA AAC GAA GCT CTA ACA TGC ACG CTT GTA GGA GAG TTT TAT CGT GAT GGT
Ser Lys Ala Cys Glu Leu Asn Glu Ala Leu Thr Cys Thr Leu Val Gly Glu Phe Tyr Arg Asp Gly

GAA GGC GTA ACA AAG GAT CTT AAA AAA GCT TTT GAA TAT TCT GCT AAA GCT TGT GAA TTG AAC GAT
Glu Gly Val Thr Lys Asp Leu Lys Lys Ala Phe Glu Tyr Ser Ala Lys Ala Cys Glu Leu Asn Asp

GCT AAA GGG TGT TAC GCT CTA GCA GCG TTT TAT AAT GAG GGT AAG GGC GTA GCA AAG GAT GAA AAA
Ala Lys Gly Cys Tyr Ala Leu Ala Ala Phe Tyr Asn Glu Gly Lys Gly Val Ala Lys Asp Glu Lys

CAA ACG ACA GAA AAC CTT GAA AAG AGT TGC AAG CTA GGA TTA AAA GAA GCA TGC GAT ATT CTC AAA
Gln Thr Thr Glu Asn Leu Glu Lys Ser Cys Lys Leu Gly Leu Lys Glu Ala Cys Asp Ile Leu Lys

GAA CAA AAA CAA TAA
Glu Gln Lys Gln ---
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Figure 15

HPC180

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ATG AAA ACC TTT AAA AAC CTG CTC TGT TTT AGC CTG ATC GCT ATG AGT TGG CTC CAA GCG GAC ATG
Met Lys Thr Phe Lys Asn Leu Leu Cys Phe Ser Leu Ile Ala Met Ser Trp Leu Gln Ala Asp Met

TTG GAT AAT TTC ACT AGG GCC ATT AAC AGC TAC ACC ACT AAA AAG CTT AAT GAA ATC AAG GAT CAA
Leu Asp Asn Phe Thr Arg Ala Ile Asn Ser Tyr Thr Thr Lys Lys Leu Asn Glu Ile Lys Asp Gln

GTC AAT AGC GCT AAC CCT ACT AAA AAT CAC AAT ACC ACT TAT AAC GCT AAT GGC ATG CTC ATT AAC
Val Asn Ser Ala Asn Pro Thr Lys Asn His Asn Thr Thr Tyr Asn Ala Asn Gly Met Leu Ile Asn

ATT GAT TGT AAA GTC TTA AAA AAT AAC TTC TAT TCG GTG TGT TAT TCT AGC GAG TTA AAA AAC CCT
Ile Asp Cys Lys Val Leu Lys Asn Asn Phe Tyr Ser Val Cys Tyr Ser Ser Glu Leu Lys Asn Pro

ATT TAT GGC GTG AGC GTG TTG TTT GGG GAT TTA GTG GAT AAA AAT AAT ATT GAA AAA CGC TAT GAG
Ile Tyr Gly Val Ser Val Leu Phe Gly Asp Leu Val Asp Lys Asn Asn Ile Glu Lys Arg Tyr Glu

TTT AAA ACA GAC ACT CGA TTA GCC AAA TAC CAA CAA GCC ACG ACA CAA GAT TAC ACC AGA AGC GGT
Phe Lys Thr Asp Thr Arg Leu Ala Lys Tyr Gln Gln Ala Thr Thr Gln Asp Tyr Thr Arg Ser Gly

TTT GAT AGG GGG CAT TTT GTG GCG AAT GAC GCT TCT TTT GAT TTT GCG TCT AAC CCT TTA AGA GAG
Phe Asp Arg Gly His Phe Val Ala Asn Asp Ala Ser Phe Asp Phe Ala Ser Asn Pro Leu Arg Glu

ACT TAC AGA ATG ACT AAT ATC ACC CCT GAA GCC AAA AAC ACC AAT AGG CAT TCT GTT TTA TTG GTA
Thr Tyr Arg Met Thr Asn Ile Thr Pro Glu Ala Lys Asn Thr Asn Arg His Ser Val Leu Leu Val

GAA AAA GAG GGC SGT AAT TTG GCC AGG AAA TAC CAT CAA GTT TTR GTA GAA GAA CTC ACC ATC ATC
Glu Lys Glu Gly   ? Asn Leu Ala Arg Lys Tyr His Gln Val   ? Val Glu Glu Leu Thr Ile Ile

AAA CAG GGT TAT AGG ACT TTT AGC CCT AAA AWT ATC GCT ATT CCT AGC GGC TTT TGG TAC CAC TAT
Lys Gln Gly Tyr Arg Thr Phe Ser Pro Lys   ? Ile Ala Ile Pro Ser Gly Phe Trp Tyr His Tyr

GAT ACA AGG CTA ACG GAC AGC TAT GAA AAC GCT AAA AGC GAA TGC TTT TAT ATC CCT AAT GAC AAC
Asp Thr Arg Leu Thr Asp Ser Tyr Glu Asn Ala Lys Ser Glu Cys Phe Tyr Ile Pro Asn Asp Asn

CAA AAC TAT CCC TTA CAA GAA ATG AGA AAA GAT TGT AAA GGA TAT GAG CGC GTT GAA AAG CAG GTG
Gln Asn Tyr Pro Leu Gln Glu Met Arg Lys Asp Cys Lys Gly Tyr Glu Arg Val Glu Lys Gln Val

GTT TTT AAG AAC AAT AAA AAC ACT GAG TTG AAC GAA TTG CCT AAG TAT TTT AAC AAC GCT AAG AAG
Val Phe Lys Asn Asn Lys Asn Thr Glu Leu Asn Glu Leu Pro Lys Tyr Phe Asn Asn Ala Lys Lys

TAT TAA
Tyr ---
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Figure 15

HPC174

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ATG AAA AAA TTT TTT TCT CAA TCT TTA TTA GCT TTG ATT GTG TCT ATG AAC GCG CTA CTG GCC ATG
Met Lys Lys Phe Phe Ser Gln Ser Leu Leu Ala Leu Ile Val Ser Met Asn Ala Leu Leu Ala Met

GAT GGC AAT GGC GTT TTT TTA GGG GCG GGT TAT TTG CAA GGG CAA GCC CAA ATG CAT GCG GAT ATT
Asp Gly Asn Gly Val Phe Leu Gly Ala Gly Tyr Leu Gln Gly Gln Ala Gln Met His Ala Asp Ile

AAT TCT CAA AAA CAA GCC ACT AAC GCT ACT ATC AAA GGC TTT GAT GCG CTT TTA GGG TAT CAA TTT
Asn Ser Gln Lys Gln Ala Thr Asn Ala Thr Ile Lys Gly Phe Asp Ala Leu Leu Gly Tyr Gln Phe

TTC TTT GGG AAA TAC TTT GGC TGT CGT GCT TAT GGG TTT TTT GAC TAC GCT CAT GCC AAT TCT ATT
Phe Phe Gly Lys Tyr Phe Gly Cys Arg Ala Tyr Gly Phe Phe Asp Tyr Ala His Ala Asn Ser Ile

AGG CTT AAA AAC CCT AAC TAT AAC AGC GAA GTG GCG CAA TTG GCG GGT CAA ATT CTT GGG AAA CAA
Arg Leu Lys Asn Pro Asn Tyr Asn Ser Glu Val Ala Gln Leu Ala Gly Gln Ile Leu Gly Lys Gln

GAA ATC AAT CGC TTA ACG AGC CTT GCT GAT CCT AAA ACC TTT GAG CCA AAC ATG CTC ACT TAT GGG
Glu Ile Asn Arg Leu Thr Ser Leu Ala Asp Pro Lys Thr Phe Glu Pro Asn Met Leu Thr Tyr Gly

GGG GCT ATG GAT TTA ATG GTT AAT GTC ATC AAT AAC GGT ATC ATC AGT TTG GGG GCT TTT GGT GGG
Gly Ala Met Asp Leu Met Val Asn Val Ile Asn Asn Gly Ile Ile Ser Leu Gly Ala Phe Gly Gly

GTG CAA TTG GCC GGC AAT TCA TGG CTT ATG GCG ACA CCG AGC TTT GAA GGC ATT TTA GTG GAG CAA
Val Gln Leu Ala Gly Asn Ser Trp Leu Met Ala Thr Pro Ser Phe Glu Gly Ile Leu Val Glu Gln

GCT TTG GTG AGT AAA AAA GCC ACT TCT TTC CAA TTT TTA TTC AAT GTG GGG GCT CGC TTA AGG ATC
Ala Leu Val Ser Lys Lys Ala Thr Ser Phe Gln Phe Leu Phe Asn Val Gly Ala Arg Leu Arg Ile

TTA AAG CAT TCC AGC ATT GAA GCG GGC GTG AAA TTC CCC ATG CTA AAG AAA AAC CCC TAT ATC ACT
Leu Lys His Ser Ser Ile Glu Ala Gly Val Lys Phe Pro Met Leu Lys Lys Asn Pro Tyr Ile Thr

GCA AAA AAT TTG GAT ATA GGG TTT AGG CGC GTG TAT TCG TGG TAT GTG AAT TAT GTG TTC ACT TTC
Ala Lys Asn Leu Asp Ile Gly Phe Arg Arg Val Tyr Ser Trp Tyr Val Asn Tyr Val Phe Thr Phe

TAG
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HPC176

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ATG TTA GGG AAA AAA AAC GAG GAA GTC TTG ATT GAT GAA AAT TTG GTT GGG GGT GTG ATA GCC CTT
Met Leu Gly Lys Lys Asn Glu Glu Val Leu Ile Asp Glu Asn Leu Val Gly Gly Val Ile Ala Leu

GAT AGA TTG GCA AAA CTC AAT AAG GCC AAT AGG ACT TTC AAA AGG GCT TTT TAT CTC TCT ATG GTG
Asp Arg Leu Ala Lys Leu Asn Lys Ala Asn Arg Thr Phe Lys Arg Ala Phe Tyr Leu Ser Met Val

CTC AAT GTT GCC GCT GTA ACG AGT ATT GTG ATG ATG ATG CCT TTG AAG AAA ACG GAT ATA TTT GTT
Leu Asn Val Ala Ala Val Thr Ser Ile Val Met Met Met Pro Leu Lys Lys Thr Asp Ile Phe Val

TAT GGC ATT GAT CGA TAC ACA GGA GAA TTT AAA ATT GTC AAA CGC TCC GAT GCT AGA CAA ATT GTC
Tyr Gly Ile Asp Arg Tyr Thr Gly Glu Phe Lys Ile Val Lys Arg Ser Asp Ala Arg Gln Ile Val

AAT TCT GAA GCT GTT GTG GAT AGT GCA ACT TCA AAA TTT GTC TCA TTG CTG TTT GGT TAT AGC AAA
Asn Ser Glu Ala Val Val Asp Ser Ala Thr Ser Lys Phe Val Ser Leu Leu Phe Gly Tyr Ser Lys

AAT TCT TTG AGG GAT CGC AAG GAT CAA TTA ATG CAG TAT TGC GAT GTG AGT TTC CAA ACC CAA GCA
Asn Ser Leu Arg Asp Arg Lys Asp Gln Leu Met Gln Tyr Cys Asp Val Ser Phe Gln Thr Gln Ala

ATG AGA ATG TTC AAT GAA AAT ATC AGA CAA TTC GTA GAT AAA GTC CGA GCA GAA GCT ATC ATT AGC
Met Arg Met Phe Asn Glu Asn Ile Arg Gln Phe Val Asp Lys Val Arg Ala Glu Ala Ile Ile Ser

TCT AAC ATA CAA AGA GAA AAA GTC AAA AAT AGT CCC TTA ACG AGA TTA GCA TTT TTC ATT ACC ATC
Ser Asn Ile Gln Arg Glu Lys Val Lys Asn Ser Pro Leu Thr Arg Leu Ala Phe Phe Ile Thr Ile

AAA ATC ACA CCG
Lys Ile Thr Pro
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Figure 15

HPC187

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T TGT ATT TTT TAT TGG CTC TTT TTT ACG ACT CCT TAC ATT GTA GGC GAT ATT TTG CAA TTG AAA TTT
  Cys Ile Phe Tyr Trp Leu Phe Phe Thr Thr Pro Tyr Ile Val Gly Asp Ile Leu Gln Leu Lys Phe

  ATC CGT CAA AAG CTC TGC GAG AAG CCC GTT TTA CTC CCA CAA AAG GAT TAT GAA GAA GCG GGA AAT
  Ile Arg Gln Lys Leu Cys Glu Lys Pro Val Leu Leu Pro Gln Lys Asp Tyr Glu Glu Ala Gly Asn

  TAT GCC ATT AGG AAA ATG CAA TTA TCC ATT ATT TCT CAA ATT TTA GAC GGG ATA ATC TTT GCT GGT
  Tyr Ala Ile Arg Lys Met Gln Leu Ser Ile Ile Ser Gln Ile Leu Asp Gly Ile Ile Phe Ala Gly

  TGG GTC TTT TTT GGT TTG ACG CAT TTA GAA GAT TTG ACG CAT TAT TTA AAC CTT CCT GAA ACG CTA
  Trp Val Phe Phe Gly Leu Thr His Leu Glu Asp Leu Thr His Tyr Leu Asn Leu Pro Glu Thr Leu

  GGT TAC TTG GTG TTT GCC TTG TTG TTT TTA GCG ATT CAA AGC GTT TTA GCT TTA CCC ATT AGC TAC
  Gly Tyr Leu Val Phe Ala Leu Leu Phe Leu Ala Ile Gln Ser Val Leu Ala Leu Pro Ile Ser Tyr

  TAC ACC ACC ATG CAT TTG GAT AAG GAA TTT GGC TTT TCT AAG GTG AGT TTA TCG TTG TTT TTC AAG
  Tyr Thr Thr Met His Leu Asp Lys Glu Phe Gly Phe Ser Lys Val Ser Leu Ser Leu Phe Phe Lys

  GAT TTT TTC AAA GGG TTA TCG CTC ACT TTA AGC GTG GGG TTG TTG TTG ATT TAC ACT CTT ATT ATG
  Asp Phe Phe Lys Gly Leu Ser Leu Thr Leu Ser Val Gly Leu Leu Leu Ile Tyr Thr Leu Ile Met

  ATC ATT GAA CAT GTG GAG CAT TGG GAG ATT AGC TCA TTT TTT GTC GTG TTT GTT TTT ATG ATA TTA
  Ile Ile Glu His Val Glu His Trp Glu Ile Ser Ser Phe Phe Val Val Phe Val Phe Met Ile Leu

  GCT AAT CTT TTT TAC CCT AAA ATC GCT CAG CTT TTC AAC CAA TTC ACC CCC TTG AAT AAT AGG GAT
  Ala Asn Leu Phe Tyr Pro Lys Ile Ala Gln Leu Phe Asn Gln Phe Thr Pro Leu Asn Asn Arg Asp

  TTG GAG AGT CAA ATT GAG AGC ATG ATG GAT AAG GTG GGT TTT AAA TCC GAA GGC ATT TTT GTG ATG
  Leu Glu Ser Gln Ile Glu Ser Met Met Asp Lys Val Gly Phe Lys Ser Glu Gly Ile Phe Val Met

  GAC GCT AGC AAG AGG GAT GGG CGT TTG AAT GCG TAT TTT GGG GGC TTG GGT AAA AAC AAG CGG GTG
  Asp Ala Ser Lys Arg Asp Gly Arg Leu Asn Ala Tyr Phe Gly Gly Leu Gly Lys Asn Lys Arg Val

  GTG TTG TTT GAC ACT TTG ATT TCT AAA GTT GGG ACA GAA GGG CTT TTA GCC ATT TTA GGG CAT GAA
  Val Leu Phe Asp Thr Leu Ile Ser Lys Val Gly Thr Glu Gly Leu Leu Ala Ile Leu Gly His Glu

  TTA GGG CAT TTT AAA AAT AAG GAT TTG TTG AAA AGT TTA GGG ATT ATG GGA GGC TTG CTC GCT CTT
  Leu Gly His Phe Lys Asn Lys Asp Leu Leu Lys Ser Leu Gly Ile Met Gly Gly Leu Leu Ala Leu

  GTT TTT GCT CTG ATC GCT CAT TTG CCA CCG ATC GTT TTT GAA GGC TTT AAT GTC TCA CAA ACG CCA
  Val Phe Ala Leu Ile Ala His Leu Pro Pro Ile Val Phe Glu Gly Phe Asn Val Ser Gln Thr Pro

  GCG AGT TTG ATT ACG ATT TTA CTC TTG TTT TTG CCG GTG TTT TCC TTT TAC GCC ATG CCT TTG ATC
  Ala Ser Leu Ile Thr Ile Leu Leu Leu Phe Leu Pro Val Phe Ser Phe Tyr Ala Met Pro Leu Ile

  GGG TTT TTT AGC CGA AAG AAT GAA TAC AAT GCG GAC AAG TTT GGG GCG AGT TTA AGC TCT AAA GAG
  Gly Phe Phe Ser Arg Lys Asn Glu Tyr Asn Ala Asp Lys Phe Gly Ala Ser Leu Ser Ser Lys Glu

  GTT TTA GCC AAA GCG
  Val Leu Ala Lys Ala
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HPC189

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  TTG GAA TCC TAT GGG TTG GCT TGC TCT GAC CGC AGG ATT ATT GCA GGA TTA GTT GGA ATA GTC AGA
  Met Glu Ser Tyr Gly Leu Ala Cys Ser Asp Arg Arg Ile Ile Ala Gly Leu Val Gly Ile Val Arg

  TCA ATC TGG AGC TTT TTT AGT TCA AGA TAT CAA AGA TCC CAA CAA AAA AAA GAA GTG GAT AAG AAT
  Ser Ile Trp Ser Phe Phe Ser Ser Arg Tyr Gln Arg Ser Gln Gln Lys Lys Glu Val Asp Lys Asn

  TTA CAT CAA ATT TGT GAA AAA ATT GTG CAG GAT GTG AAA AGC CGA CTT GAA AGT CGC AAA AAA GAC
  Leu His Gln Ile Cys Glu Lys Ile Val Gln Asp Val Lys Ser Arg Leu Glu Ser Arg Lys Lys Asp

  ATA TGG GAA AAG ATT GAA AAA CTC AAA GCC AAT CTT AGA CCT GTT GAT AAT TAC GAA CGC ATG AAA
  Ile Trp Glu Lys Ile Glu Lys Leu Lys Ala Asn Leu Arg Pro Val Asp Asn Tyr Glu Arg Met Lys

  GGA CAA TTG AAA GAA GCC CAT GAA AAA TTA GGA TAC ATC TCT CAT AGT ATC CAT CTA ACA ATA TCA
  Gly Gln Leu Lys Glu Ala His Glu Lys Leu Gly Tyr Ile Ser His Ser Ile His Leu Thr Ile Ser

  AAA CAA GGA GCA TGC AAT GAA GAA TGA
  Lys Gln Gly Ala Cys Asn Glu Glu ---
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Figure 15

HPC191

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GAT CAA AAA ACG GCT CAA AAA ATG CTC GCT GAT TTG AGC GTG GTA GGG GCG TAT CTT AAA AAA CAA
Asp Gln Lys Thr Ala Gln Lys Met Leu Ala Asp Leu Ser Val Val Gly Ala Tyr Leu Lys Lys Gln

CAA GAG AAT GAA AAG GCT CAA AGC CCT TAT TAC AGA AGC AAC AAC TAT TAC AAC TCT TAC TAT AGC
Gln Glu Asn Glu Lys Ala Gln Ser Pro Tyr Tyr Arg Ser Asn Asn Tyr Tyr Asn Ser Tyr Tyr Ser

CCT TAC TAT AGC CCT TAT TAT GGC ATG TAT GGC ATG GGC ATG TAT GAT TTT TAT GAC TTT TAT GAT
Pro Tyr Tyr Ser Pro Tyr Tyr Gly Met Tyr Gly Met Gly Met Tyr Asp Phe Tyr Asp Phe Tyr Asp

GGC ATG TAC GGG TTC TAC CCT AAC ATG TTG TTT ATG ATG CAA GTT CAA GAT TAC TTG ATG TTA GAA
Gly Met Tyr Gly Phe Tyr Pro Asn Met Leu Phe Met Met Gln Val Gln Asp Tyr Leu Met Leu Glu

AAT TAC ATG TAT GCA CTC GAT CAA GAA GAG ATT TTA GAC CAT GAC GCT TCT AAT AAT CAA CTT GAT
Asn Tyr Met Tyr Ala Leu Asp Gln Glu Glu Ile Leu Asp His Asp Ala Ser Asn Asn Gln Leu Asp

ACG CCT ACT GAT GAT GAC AGA GAC GAT AAG GAC GAT AAA TCC TTG CAG CAG GCA AAT CTT ATG AGC
Thr Pro Thr Asp Asp Asp Arg Asp Asp Lys Asp Asp Lys Ser Leu Gln Gln Ala Asn Leu Met Ser

TTT TAT CGT GAT CCC AAA TTC AGC AAA GGC ATT CAA ACC AAC CGC TTG AAT AGC GCT TTA GTC AAT
Phe Tyr Arg Asp Pro Lys Phe Ser Lys Gly Ile Gln Thr Asn Arg Leu Asn Ser Ala Leu Val Asn

TTA GAC AAC AGT CGC ATG CTC AAA GAC AAT TCG CTT TTC CAC ACT AAA GCC ATG CCT ACT AAA AGC
Leu Asp Asn Ser Arg Met Leu Lys Asp Asn Ser Leu Phe His Thr Lys Ala Met Pro Thr Lys Ser

GTG GAT GCG ATA ACT TCT CAA GCC AAA GAG CTT AAC CAT TTA GTG GGG CAA ATC AAA GAA ATG AAG
Val Asp Ala Ile Thr Ser Gln Ala Lys Glu Leu Asn His Leu Val Gly Gln Ile Lys Glu Met Lys

CAA GAT GGG GCG AGT CCT AGT AAG ATT GAT TCA GTG GTT CAT AAA GCT ATG GAA GTG AGA GAC AAA
Gln Asp Gly Ala Ser Pro Ser Lys Ile Asp Ser Val Val His Lys Ala Met Glu Val Arg Asp Lys

TTA GAC AAT AAT CTC AAC CAA TTA GAC AAT GAC TTA AAA GAT CAA AAA GGG CTT TCA AGC GAG CAA
Leu Asp Asn Asn Leu Asn Gln Leu Asp Asn Asp Leu Lys Asp Gln Lys Gly Leu Ser Ser Glu Gln

CAA GCC CAA GTG GAT AAA GCC CTA GAC AGC GTG CAA CAA TTA AGC CAT AGC AGC GAT GTG GTG GGG
Gln Ala Gln Val Asp Lys Ala Leu Asp Ser Val Gln Gln Leu Ser His Ser Ser Asp Val Val Gly

AAT TAT TTA GAC GGG AGT TTG AAA ATT GAT GGC GAT GAT AGA GAC GAT TTG AAT GAT GCG ATG AAT
Asn Tyr Leu Asp Gly Ser Leu Lys Ile Asp Gly Asp Asp Arg Asp Asp Leu Asn Asp Ala Met Asn

AAC CCC ATG CAA CAA CCT GCA CAA CAA ACG CCT ATT AAC AAC ATG GAC AAC ACC CAT GCA AAT GAC
Asn Pro Met Gln Gln Pro Ala Gln Gln Thr Pro Ile Asn Asn Met Asp Asn Thr His Ala Asn Asp

AGC AAA GAT CAA GGG AGT AAC GCA CTC ATA AAC CCT AAC AAC GCC ACT AAC ACC GAT GAC ACT CAC
Ser Lys Asp Gln Gly Ser Asn Ala Leu Ile Asn Pro Asn Asn Ala Thr Asn Thr Asp Asp Thr His

ACC GAC GAT ACT CAC ACC GAC ACT AAC ACC ACA AAC GAT ACC AGC ACT ACT GAC ACC CCC ACT GAT
Thr Asp Asp Thr His Thr Asp Thr Asn Thr Thr Asn Asp Thr Ser Thr Thr Asp Thr Pro Thr Asp

GAT AAA GAT GCT AGC GGC AAC AAT ACC GGC GAT ATG AAT AAC ACG GAC ACC GGC AAT ACT GAT AAC
Asp Lys Asp Ala Ser Gly Asn Asn Thr Gly Asp Met Asn Asn Thr Asp Thr Gly Asn Thr Asp Asn

GGT AAC ACT GAT GAT ATA AGC AAC ATG AAC AAC GGC AAC GAT GAT GCG GGT AAC GCT AAT GAC GAC
Gly Asn Thr Asp Asp Ile Ser Asn Met Asn Asn Gly Asn Asp Asp Ala Gly Asn Ala Asn Asp Asp

ATG GGT AAT AGC AAC GAC ATG GGC GAT GAC ATG AAT AAT GCG AAC GAC ATG AAC GAT GAC ATG
Met Gly Asn Ser Asn Asp Met Gly Asp Asp Met Asn Asn Ala Asn Asp Met Asn Asp Asp Met
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